

CITY GROWTH ESSENTIALS

STANLEY L. McMICHAEL

ROBT. F. BINGHAM

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CITY GROWTH ESSENTIALS

BY

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AND

ROBERT F. BINGHAM, Attorney-at-Law

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PUBLISHED IN 1928 BY

THE STANLEY McMICHAEL PUBLISHING ORGANIZATION

CLEVELAND, OHIO

ENDORSEMENT

"City Growth Essentials," prepared under the joint authorship of Stanley L. McMichael and Robert F. Bingham, is the latest addition to the now well known series of books on real estate offered by the Stanley McMichael Publishing Organization. While the present book was originally intended to be a revision of the authors' "City Growth and Values," the entire book has, as a matter of fact, been reorganized and rewritten.

The book contains a vast amount of descriptive material, much of which pertains to very recent developments, and illustrates the problems of the modern city with a remarkable array of interesting examples.

The book will undoubtedly give many helpful and practical suggestions to the general reader, and will suggest a large number of new problems for investigation by research students.

(Signed) ARTHUR J. METZKE, Director,

Department of Education and Research
National Association of Real Estate Boards.

July 12, 1928.

FOREWORD

Cities are a distinguishing mark of advanced civilizations. There have been careful studies of the political, social and legal aspects of this phenomenon of advanced civilization since the beginning of scientific inquiry; it is passing strange that the study of the economic aspects of the physical structure itself, and of the uses to which its different parts are put, should not have received earlier attention.

A promising beginning of this study was made in 1903 with the publication of "PRINCIPLES OF CITY LAND VALUES" (1), but for many years the study languished. It received a new impulse from the organization of the Institute for Research in Land Economics and Public Utilities in 1920; and in 1923 with the publication of the first edition of the present work, the study came again into the forefront.

Doubtless additional necessity for the study was indicated by the conditions prevailing throughout the country at the end of the Great War, when, due to the accumulated congestion and the tendency toward lateral expansion caused by the universal use of individual transportation, American cities began to develop with a rapidity that was astonishing. Changes in their internal structure were effected with no less rapidity and with as great an influence upon the value of the land.

Another impulse has come from the study of sociologists of what has come to be known as human ecology. The objective of these studies appears to be that of discovering the relationships which exist between social organizations, customs, and institutions and the positions which they occupy relative to each other. The relationship between this approach and that of the student of land and its uses is too obvious to need any comment (2).

Attention on the problem has also been focused by geographers, by whom an attempt is being made to ascertain the relationship between urban communities and the natural features of the environment in which cities are found. More and more the attention of

(1) By Richard M. Hurd, President of the Lawyers' Mortgage Company, published by the *Record and Guide*, New York City.

(2) For a discussion of the methods and findings of the sociologist, see Park and Burgess, "*The City*" (Chicago, 1925); Burgess, "*The Urban Community*" (Chicago, 1926); and Bedford, "*Readings in Urban Sociology*" (New York, 1927).

geographers appears to be turned toward the problems of urban geography ⁽³⁾.

For many years the great city planning movement in the United States concerned itself chiefly with elements of the aesthetic in the planning of cities. Latterly, however, there appears to be a tendency, also, for this great group of American thinkers to turn their attention more and more to the problem of uses and the functioning of land in urban areas. While artistic considerations weigh heavily in the arrangement and uses to which urban land is put and the consequent values which it attains, city planners today are recognizing that the artistic must be based upon the economic if it is to achieve success.

The premise upon which the current studies are being made is that the city is, after all, a natural phenomenon. As such, it is obedient to natural laws. Its growth is a natural growth, and the changes wrought by growth by careful observation can be classified and the natural laws governing them discovered. This thought was clearly expressed by Hon. Elihu Root at a meeting held for the purpose of organizing the Regional Plan of New York and Its Environs:

"A city is a growth, and is not the result of political decrees or control. You may draw all the lines you please between counties and states; a city is a growth responding to forces not at all political—quite disregarding political lines. It is a growth like that of a crystal, responding to forces inherent in the atoms that make it up." ⁽⁴⁾

A typical case of a study designed to observe and record in detail different principles of growth is found in the examination of New York made by the Regional Plan of New York and Its Environs ⁽⁵⁾.

From the point of view of the real estate dealer, the problem has large significance. It embraces a study of the uses to which all the property within a metropolitan area is put; it requires an examination of all the influences which go to determine high or low land values, and which dictate the type of improvement best suited to every location.

The practical significance of this study of urban growth is large. It means the eventual direction and control of forces that have heretofore operated blindly, which means, consequently, greater

(3) See, e. g., Vidal de la Blache, "*Principles of Human Geography*," Part II, Chapter V (New York, 1926), and particularly pages 471 and following. Also, Febvre, "*A Geographical Introduction to History*" (New York, 1925), pages 324, 330, 340, and 346.

(4) Quoted in Burgess, *op. cit.*, page 221.

(5) The results of these studies are made available in a series of monographs published by the Regional Plan of New York and Its Environs, 1926, 1927, and 1928.

stability in city land values. It means the conscious seeking of the highest and best use to which land can be put, rather than the unconscious groping for that use oftentimes with false results.

It would be impossible to measure the savings consequent upon this intelligent hastening of the economic process which brings land into its proper use. The savings which will be made will be measured not only in terms of greater utility at that moment in land, but also by the enormous expenses incident to mistakes in urban planning and development. Streets will be built of more adequate size and uses more wisely allocated to the territories to which they are best adapted and toward which they would eventually, inevitably gravitate.

In any study of American cities, it must be kept constantly in mind that American cities are as yet young and are consequently dynamic. The comparatively static conditions in cities of European countries may offer excellent opportunities for research, but forbid unthinking following of methods and plans worked out in those cities. The enormous amount of wealth and of population concentrated in American cities staggers the imagination when it is remembered that that concentration has been accomplished within but little more than a century. Concepts that today are adequate, tomorrow have been laid on the shelf as antiquated by the dynamic force of American growth. Here in the span of a decade or two one can see the results of forces which in a more static community might take generations to work out.

In the face of those kaleidoscopic changes, the real estate dealer who is not a student of city growth stands helpless and ill-equipped. He is dealing with forces complicated in their nature and wide in their scope. These forces are the essence of the commodity which he handles.

Whenever any attempt is made to study the subject seriously, it is found to bristle with unanswered questions. Before the subject of real estate values can be made intelligible and scientific, a vast amount of data must be secured, classified and analyzed; the natural characteristics and processes of city growth must become familiar. A simple example that will serve to illustrate: In a static situation, the valuation of income property hinges upon determination of gross earning power and of operating expenses. These may be capitalized at a going rate of interest and the result represents a fair estimate of the value of the property. But under the influences of the dynamic changes in American cities, present gross income may be a very treacherous guide to the anticipated earn-

ings of the property. With business districts jumping, sliding and bursting almost over night, under the pressure of economic forces whose power increases in geometrical ratio, the property which today yields an adequate return upon a given investment, tomorrow may be left tenantless or sought for only by those uses which make it impossible for them to earn income on the fair valuation today. On the other hand, great fortunes are made by the same forces which bring higher and more intensive uses to property that has previously been earning only a meager income. This situation obliges the student of real estate values to inform himself as far as possible upon the subject which is the title of this text.

American cities appear to be torn between two almost opposed tendencies. The one tendency is creating the American skyscrapers in congested business and financial districts at a rate never before approximated. World's height records in projected buildings are scarcely announced before they are superseded by a still more daring imagination. These skyscrapers are being created in response to a demand for greater convenience in the transaction of American business, and with a greater specialization of function which appears to be asserting itself in American communities—a demand that the organizations performing the different functions be located physically close to each other so that business may be dispatched more readily. Thus concentration and congestion are increasing.

Coincident with the tendency toward concentration and decentralization, there is a tendency also for similar uses to group themselves more compactly in American cities than has been the case in the past. Financial, retail, wholesale, and other districts of the American cities are becoming more clearly defined; higher uses are pushing out the lower uses, and the economic forces are bringing about rapid adjustment of every district so that it is fulfilling every year more adequately its function in the general pattern of the city.

It may not be too optimistic to express the belief that within a few generations what heretofore has appeared to be haphazard and unintelligible city growth will be considered as the expression of natural forces operating in accordance with well-understood natural laws. The personal revision of this useful book represents a great advance in knowledge over its predecessor; it retains the attractions which its predecessors had gained from wide and careful observation.

ERNEST M. FISHER.

Ann Arbor, Mich, 1928,

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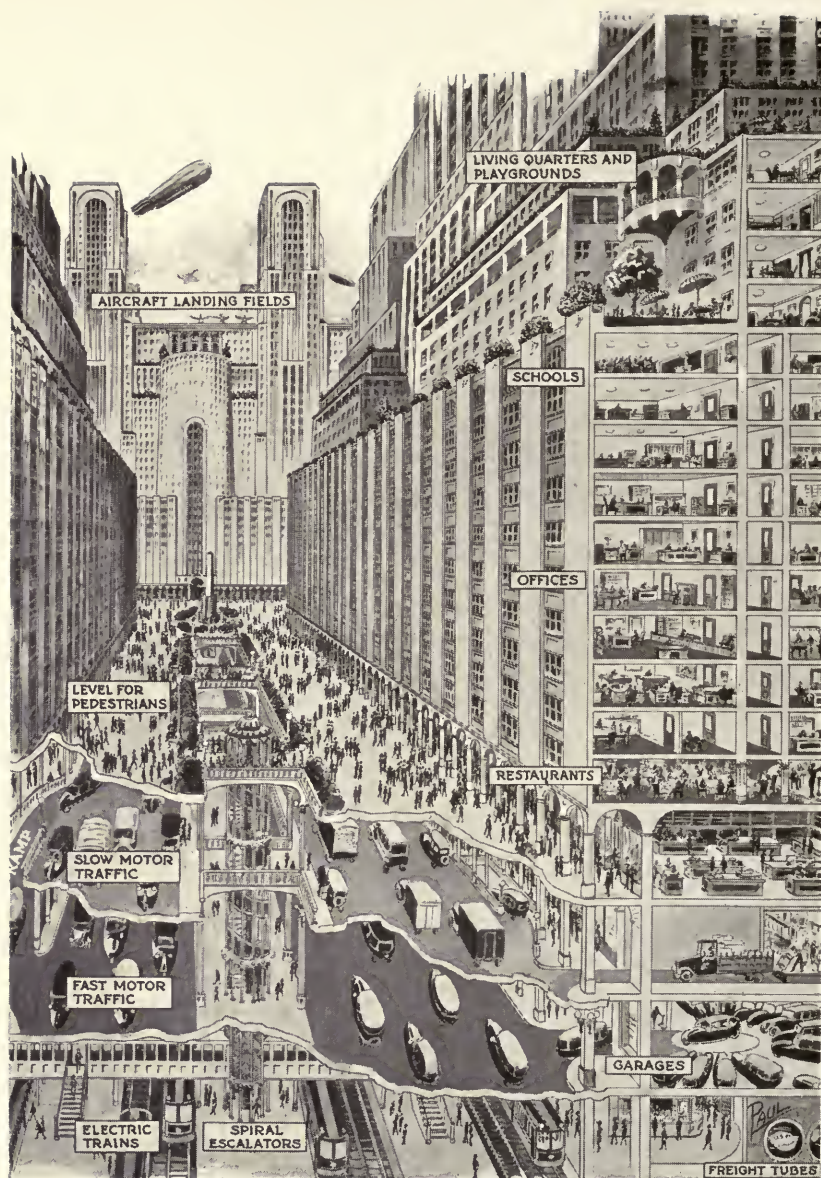
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Courtesy Popular Science Monthly

A CROSS SECTION OF THE CITY OF THE FUTURE

Here is the way congested districts in the giant city of the future may develop, according to Architect Harvey Wiley Corbett of New York. The plan provides for three subway levels, with rapid transit on the lower level, fast motor traffic on the next, and slow truck traffic above. Pedestrian travel will be cared for on elevated sidewalks. Commercial enterprises will face this level, with offices, schools and living quarters above. Aircraft landings will be provided on tops of buildings.

City Growth Essentials

CHAPTER 1.

THE CITY—ITS FUNCTION

Growth of American communities an outstanding phenomenon—Inventive genius spurred early American city growth—The story of rapid urbanization of population—The city leads culturally—A natural product of the machine age—Functions a city must perform.

What is the city? Is it merely numbers of people living and working within a relatively small geographical area? Is the presence of commerce and industry affording employment to a large number of individuals the distinguishing characteristic between urban and rural groupings? Does mere population density properly describe the phenomenon of urbanization which has accompanied the advance of man through various stages to what is known today as modern civilization?

An aggregation of people living within a certain limited land area does not satisfactorily describe the city. If this alone was the measure of urban communities, the definition would be satisfied by a description of a large apartment hotel. Nor is the association of persons for the carrying on of commerce or industry the ultimate fact in urbanization. The Ford Motor Co. employing thousands of men would dwarf the business activities of many of the communities of the world which are commonly accorded the name of "city".

The city of modern civilization may have many thousands of people working within its political boundaries, yet finding residence in many separate districts and communities organized and operating as distinct governmental units. Therefore, the legal definition which emphasizes municipal boundary lines and centered governmental functionings is inadequate. Any great American city will disprove this as a complete definition. Detroit has entirely surrounded two municipalities, Highland Park and Hamtramck, which, although possessing separate political existences, are as much a part of the larger city as any ward therein.

New York City is an *urban region* rather than a political unit with distinct geographical and legal boundary lines. Not only is Greater New York a confederation of five boroughs operating independently in matters of local administration, but state boundary lines intervene to separate many true residents of the metropolitan area from inclusion within the corporate confines of the legal city. Hoboken, Jersey City and Newark are in New Jersey, yet, functionally, are a part of the urban population of the metropolis of America.

No simple formula can explain the great city. The economic functions will produce one definition, the social and cultural another. Political science will devise an explanation which will not satisfy sociology. An urban community is not encompassed by mere legal boundaries under the control of a single municipal government nor are its industries and commercial activities all contained within corporate limits. Social and cultural activities reach miles beyond its confines. In one sense the hinterland of broad agricultural acres are as truly a part of the city as the factories, department stores and public buildings within its political jurisdiction. Mutually dependent upon each other are the people within the city boundaries and many others for miles around.

Growth of American cities during the nineteenth and twentieth centuries has become an outstanding manifestation of modern civilization. Transition from rural to urban life has accompanied human advancement and social development. Throughout the world, this tendency for humans to congregate in comparatively small geographical areas indicates the importance of studies which may be made of the complex social, economic and governmental organization known as the city.

This gregarious characteristic of man is not new and the story of the institution and development of cities is recorded in human history since remotest time. The Bible, man's earliest authentic history of human endeavor, is replete with stories of cities since the dawn of human activity. Their comings and their goings have been enshrouded in romance and mystery, in bloodshed and victories. Palestine, Egypt, China and India had great cities long before the Christian era. The stories of Greek culture and Roman opulence are almost entirely records of urban life.

Medieval Europe had walled towns, some of which have unbroken histories of existence down to the present day. Wherever

human activities, whether for good or evil, have been worthy of historical record, they have been, almost without exception, associated with cities.

Not alone does the vast increase in population density throughout the world over the numbers of earlier days account for the remarkable growth of urban communities. The intermingling of human beings in settlements has always been an urge for the development of better and higher things. Art, literature, architecture, religious pageantry, sanitation, invention and the host of other accomplishments, which have come in centuries past, have been the direct product of the inspirations and necessities of community life. In America, particularly, it may be observed that the marked growth of cities has paralleled the invention and development of labor saving machinery. Machine industry has wrought marvelous changes in human affairs and nowhere has this been better demonstrated than in urban life.

Prior to the invention of the cotton gin, the steamboat, the sewing machine, railroads and other mechanical discoveries, American cities were little more than ports, frontier posts and trading centers. Mechanical transportation and the amazing development of labor saving devices worked miracles, changed industry from the handicraft stage to the machine era, making possible the manufacture and distribution of goods in greater quantities and at substantially lower costs.

To operate these new machines and to carry on the varied activities of the new industrial age required workmen in greater numbers. Small shops with a few laborers gradually grew into great factories employing many hundreds. Workmen were attracted from rural districts and from many foreign lands, finding remunerative employment in the scores of manufacturing plants which sprang up in many parts of the United States. The invention and utilization of new types of farm machinery made possible the cultivation of crops with fewer men, with greater speed and lessened effort and at a distinct saving in cost. Thus were released thousands of farm workers to swell the population of growing towns which soon developed into important cities. These became the homes of industries and expanded in population and area with a rapidity undreamed of in earlier times.

The federal census of 1920, for the first time in the history of the United States, showed a predominance of urban over rural

population. More than fifty-one percent of the people were shown to reside in communities having 2500 or more residents. There were nearly 3000 urban centers where groups of people lived and carried on communal activities. From 1920 to 1928 the growth has probably continued at approximately the same pace evidenced between 1910 and 1920 when 12,000,000 people shifted from rural to urban life. Over half of this increase was distributed to the states of New York, Pennsylvania, New Jersey, Ohio, Indiana, Illinois, Michigan and Wisconsin. It may be noted that these include the nation's leading industrial states. Increases in urban population between 1910 and 1920 amounted to 28.8 percent while the rural population during the same period increased but three percent.

Rapid urbanization has not been confined alone to the United States, however. In the countries comprising Great Britain, according to the London Economist, in 1921, 79.3 percent lived in urban districts as against 78.1 percent in 1911, 77 percent in 1901 and 72 percent in 1891. Certain other European countries doubtless show the same tendencies.

Culturally, the city has led in all nations. Here congregate the leaders of society in all of its branches. Here are woven together the threads that make the completed fabric. Residents of urban communities develop into leaders in all realms of creative and scientific thought and research. Educational institutions of all types and importance flourish in and around urban centers. Art museums, conservatories of music and similar cultural agencies find their support and patronage in the larger cities.

Functioning in the economic life of the nation, the city provides ideal advantages for the location of industrial concerns. All of the elements necessary for their successful operation center here. Manufacturing enterprises usually require concentrated population from which to draw both skilled and unskilled labor. Raw materials and supplies used in such processes are most easily obtained in cities. Transportation to distant markets is afforded by various outlets, both by land and water.

It is interesting to note that causes and conditions which promoted the founding of many ancient cities have almost entirely disappeared since the element of protection which was afforded by the walled town has become unimportant. Trade and industry have always been important in the founding and development of

cities and are, today, most potent influences. The modern city, as a center of trade and commerce, manufacture and industry, transportation, education, finance and culture has a definite place in present day civilization. This position is becoming of increasing importance from year to year as man becomes more dependent upon others to contribute to his security, comfort, happiness and general well being. The self sufficient individual is a relic of the past and no longer exists. If, by chance, one hopes to so live, his place is not in the city where every individual becomes a cog in the great social machine, contributing some part to the welfare of his fellow man and society as a whole.

In recent years the city has come to be considered a metropolitan area, not limited from a social and economic standpoint by territorial boundaries but rather on the basis of the functioning of the various settlements and their people with reference to the larger population unit. New York, Pittsburgh, Cleveland, Los Angeles, Detroit, San Francisco, Toronto, and Chicago are cities where the satellite towns and their populations are properly considered a part of the city functionally.

From the standpoint of numbers of people it is quite apparent that the city is of major importance in American life, and so it will continue to be. The urban community at the same time contributes to modern society economically and socially. As a political unit, influencing matters of public government, the city bears an important part. In most of the industrial states where great American cities exist, a large proportion of the representatives in the state legislatures come from cities. Their experience as members of urban society affects their attitude towards legislative problems and their influence goes far towards the passage of the laws of the state and nation.

What, then, is the real function of the city? Manifestly it is a place in which one can live permanently, pleasantly and profitably. Essential attractions afforded must include:

1—Business occupations of a variety to suit all tastes and abilities.

2—Governmental agencies, to protect and preserve the health and welfare of residents and their property.

3—Transportation agencies, to permit of easy access from one place to another.

4—Educational facilities of wide variety.

5—Financial service, such as afforded by banking institutions.

6—Professional service, rendered by the trained professions.

7—Recreational facilities of many kinds.

8—Welfare service, afforded by hospitals and institutions for the care of the fit and the unfit.

9—Spiritual centers, including churches and similar agencies.

To create, articulate and operate the services broadly enumerated above constitute the functions of a modern city. There are many ramifications which extend into different fields, but essentially the city is charged with doing these things. How well it is doing them, how widespread have been the changes which are intimately affecting the lives of millions of city dwellers all over the globe is a story filled with romance, action and genuine achievement. It is a tale that now touches the lives of over half of the population of the United States, and one that will continue to interest people to a greater degree in the years to come, for the world is slowly but surely becoming urbanized. To live up to its destined mission is the challenge that the city of today and tomorrow must face thoughtfully and courageously.

Review

1—Wherein do cities reflect the growth of civilization?

2—What countries had important cities long before the Christian era?

3—What influence did the introduction of labor saving devices have on American cities?

4—Did the introduction of the machine age cause more or fewer people to live in cities?

5—Do more people live in cities than in rural sections in the United States?

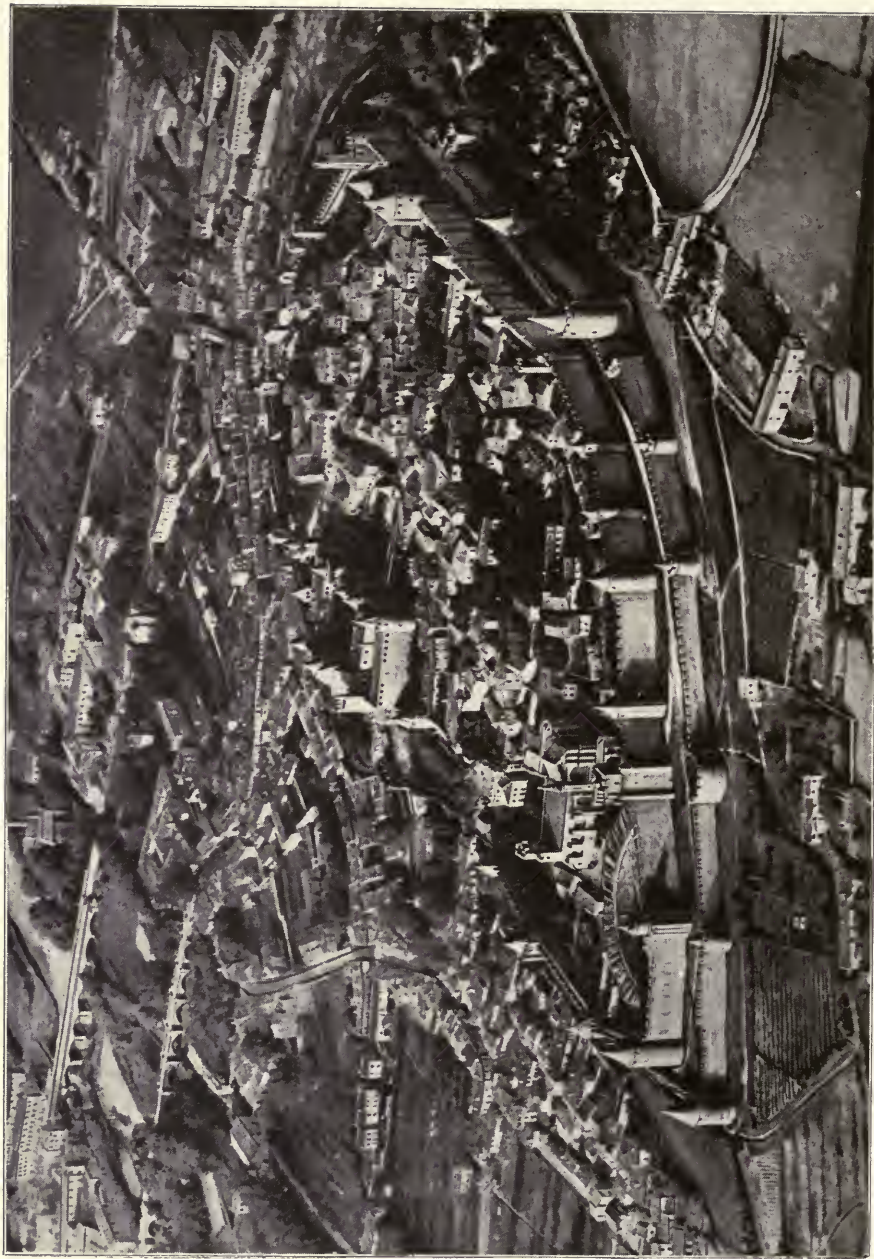
6—How have cities become cultural leaders in national life?

7—What advantages do cities offer for industrial activities?

8—Outline a number of the functions a city should perform to successfully live up to its standard?

9—Why does the city today attract rural dwellers?

10—May cities expect to decrease or increase in size in future years?



EARLY CITIES EXISTED FOR PURPOSES OF DEFENSE

(C) Underwood & Underwood

It is not generally known in America that types of highly fortified cities still exist in Europe. Carcassonne, a walled city of over 25,000 inhabitants in southwestern France, still boasts of its double line of ancient towered ramparts, over 1,600 yards in circumference, which are always maintained in good repair. Construction of the walls dates back to the sixth century. They are regarded as being among the strongest city fortifications now in existence. Two massive gates give entrance into the fortified portion of the city.

CHAPTER 2.

ANCIENT AND MODERN CITIES—A COMPARISON

Origin of cities—The family and tribal grouping—Nomadic tendency of early men—Early settlements—City states of the Greeks and Romans—Early trade cities—Medieval villages and towns—Comparison of the defense factor, food and water supply, commerce and industry in ancient and modern cities—Social conditions of ancient towns compared with modern communities.

Cities are among mankind's oldest institutions. Ancient world history is a record of life in cities. What is known of civilization in olden times centered invariably around life in communities, so that early civilized life was essentially a city life. Political, economic and social life, as exemplified by the Greek city-states and the Roman Empire, was nothing more nor less than amplified city life.

Ancient writers have described the civilization then existing, and archeologists, searching for evidence, have discovered many documents, both official and private, contracts, leases, bills of sale and deeds, all of which prove conclusively that where people congregated for the purpose of residence and trade there developed civilization as modern people know it.

Towns and cities existed before the recorded history of mankind. Perhaps not cities in the strictly modern conception of the term, but cities nevertheless. Groups of men, families and servants, living in one place, having a common social life, associating for defense as necessity required, constituted the earliest towns, the forerunners of cities.

A noted historian expressed the thought in the following manner:

"First of all, an agglomeration of men living in any one place, and second, and what was more important in the ancient world, this group was a unit from the social, economic, and especially from the political point of view." (1)

(1) "*Cities in the Ancient World*," lecture by Michael I. Rostovtzeff (University of Wisconsin) published in "*Urban Land Economics*"—Richard T. Ely, et al.

Comparatively little is known of the communities of prehistoric men. The family grouping must be considered as the forerunner of the early village. First a man and his family, then additions to the family by marriage of children and the resulting natural increase, then the adding of slaves and retainers, unattached individuals also joining the family to be under the protection and guidance of some powerful patriarch. Thus a family became a tribe with hundreds composing it. "Human society began, just as herds and droves begin among animals, by the family delaying its breaking up." (2)

Early tribal groups were migratory, constantly following food supply. Then some began to settle down in places where game was plentiful and the raising of grain was comparatively easy. Another type of man became more nomadic and wandered from place to place where good grazing was afforded for his ever increasing herds of cattle. Milk became one of the principal foods of this roving type of man. Water always was the prime necessity of both the settler and the rover.

The nomad tribe had the greater struggle for existence and became barbarians, while the tendency of settled life was to soften the members of the community. To the nomad, the settlers were easy prey and raiding for plunder and food was probably the forerunner of war. Therefore the settlers early found it necessary not only to locate their tribal settlements close to water and food supply, but also to seek locations where defense was easy, not alone from wild beasts but from wilder men.

So it came about that the earliest known settlements of mankind were located in places where water was abundant, where the soil was arable and could be cultivated to produce grain and food stuffs, and in locations affording natural defense in case of attack from without.

In some countries villages were built on piles in lakes far from shore. Huts were connected with the land by wooden bridges, so constructed that on alarm they could be readily removed. In Italy exist the ruins of villages built on high mounds of earth in imitation of lake dwellings, constructed to afford defense.

The commonest fortification adopted was the wall. Villages protected by walls were first located, when possible, upon high

(2) "*Outline of History*," by H. G. Wells—MacMillan Co.—New York—Vol. 1, p. 178.

and isolated hills. Here refuge from attack was afforded the people of the surrounding territory. Larger walled villages were later built upon plains and in valleys, where the villagers tended their animals and cultivated small garden plots inside the walls. First, these walled towns were mere places of refuge, resorted to only in time of attack, then more reliance was placed upon the wall for protection and as these towns were located in fertile plains and



THE GREAT WALL OF CHINA

In the third century B. C., during the Ch'in dynasty, a great stone wall about 1500 miles in length was erected by the Chinese to repel the invasion of warlike Tartars. It was by long odds the greatest structure ever built as a means of defense. The wall was repaired in the fifteenth century, and in the sixteenth century was extended some 300 miles through the mountains over which it was built by many thousands of laborers.

valleys where cultivation could be carried on, the community became a walled place of residence and later a center for trade and commerce. Here lived the tribal chieftain, or king, here rested the seat of local government.

Walled villages, towns and cities exist throughout the world. China, in her ancient civilization, found city walls inadequate to

properly protect against the Tartar hordes of the north, and, as a means of defense, constructed the Great Chinese Wall, 2000 miles in length, much of which still exists.

With the advent of the early village and its growth into a semi-permanent settlement, social life developed and community spirit became noticeable. Association for common defense was a sufficient cause for the growth of primitive civic loyalty. A chief of a tribe became the king of a nation, which in early times was merely the enlargement of the tribal family. He came to be looked upon not only as a leader but even a demi-god and was sometimes worshipped as such. The idea sometimes carried with it the assumption of divine right.

Under the protection of the castle of the king, and often in the shadow of a religious shrine, a population gathered seeking not only the safety afforded by the walled town but also the favor of the sovereign. Men engaged in peaceful pursuits by choice, but, when occasion demanded, they joined together in an army, under the leadership of the king, for the defense of the town or for conquests of other communities.

From the tribal community developed the city and later as a logical sequence, the city state. These city states are principally characteristic of Greek and Roman civilization, with early Athens, Sparta and Rome as prominent examples. Even before the Greek era, Babylon was the center of a small territorial state, which sought by conquest, to unite the people of the surrounding territory under one God and king, with Babylon as the city and all other communities made tributary villages, or entirely destroyed, and their inhabitants transported to swell the population of the city capital.

These ancient city states were, in fact, regional cities, with only a small area embraced in the actual confines of the town, and a much larger district surrounding and tributary thereto, all under the government and protection of the city.

Another type of ancient city is represented by Tyre and Sidon on the Phoenician coast of the Mediterranean Sea. These cities were commercial in character and grew up because of trade advantage incident to their particular location. Here was the meeting place of sea and land transportation, the ships of the sea and the ships of the desert, the caravan trains. While defense was important, yet trade and industry came first. The association of free

merchants not directly interested in agriculture occasioned the growth of such city states. The agricultural hinterland, when it existed, was comparatively unimportant. The nucleus was a group of merchants, sailors and fishermen. The former type was, in fact; a peasant state, the latter a merchant state.

These early city states were imperialistic in tendency and, to further their growth and power, colonists were sent out to establish new tributary cities in newly conquered territories. The colonial policy was one of the distinguishing features of the ancient city state. Miletus and Syracuse were early Greek colonies, the former of Ionian and the latter of Dorian origin. Sicily and the shores of southern Italy were colonized by the Greeks. Carthage was a Phoenician colony. Rome established many colonies throughout Italy with the object of furthering the power and prestige of the mother city state. A colony of the Greek cities was usually independent of governmental control by the mother city, but the Roman colony was subservient to its home city.

The Middle Ages saw the founding and the growth of many villages into towns and cities, patterned on plans much the same as the ancient cities. As barbarians became less savage, the desire for permanent abode caused nomads to become settlers. The feudal system was the outstanding characteristic of medieval towns. As territories were conquered by the barbarian tribes of the middle ages, lands were parceled out among the chief men of the tribe upon condition that they would render military service and, sometimes, support to the overlord.

Not only was this personal military service, but also the service of a certain number of knights or men at arms in proportion to the amount of land occupied. The overlord, or suzerain, was supreme, then a subtenant or vassal owing fealty, allegiance and military support to the overlord, then from the subtenant a lower group of vassals, owing fealty and support to the over vassal and in the lowest order the serf, or peasant, only a little better than a slave who remained upon the land as a part thereof. He was the tiller of the soil, who was obliged to give the major portion of the produce of the soil to his immediate overlord, in exchange for protection afforded him and his family. Thus the so-called manorial system of land holding developed and around the home of the overlord, the manor house, small settlements of retainers, servants and a few free workmen grew up.

The cultivators of the soil, the serfs, lived in small villages where certain commons or tracts of pasture lands were used by all for the grazing of cattle. These serfs owned no land but were assigned areas for cultivation. Firewood was cut from a common forest.

The town of the middle ages was distinct from the village last described. The town was, in itself, a manor or group of manors, with men living in closer association than elsewhere. Towns were usually fortified by walls or water moats. The inhabitants were collectively responsible for payments demanded by the overlord and for taxes due the supreme lord or king. The government was usually free from control by the lord, and courts administered justice in the town separate from the manorial tribunal.

Sometimes these special privileges accorded to towns were the result of rebellion against feudal power. Occasionally this freedom was purchased from the lord. The favor of the king frequently was bestowed upon these so-called "free" towns as a means of checking the increasing power of the vassal nobles.

Unlike so many of the ancient world cities and towns, these settlements of the middle ages were primarily interested in trade. Reference here is limited to the town and not the village of serfs which was purely agricultural in character. In the town handicraft industry grew up and furnished the products which were exchanged in market with other towns. Trade relations were carried on between towns much as is the international commerce of today, the town being the unit of commerce and not the nation. Cologne, Strassburg, Paris, London, York, Bristol and Yarmouth are examples of cities which have grown up from old medieval towns.

Prior to the white man's discovery of America, the Indian inhabitants of the Western continent had villages and towns as tribal habitations. The village was centered around a council house which was the public building of the community. Here the old warriors of the tribe, headed by the chief and supported by the younger warrior tribesmen, assembled to determine tribal policies and administer the affairs of the community.

With the advent of white men, colonization, based upon European practices, began in America. Small villages were established on the Atlantic seacoast or along natural watercourses, all protected by some form of fortification, usually a stockade and blockhouse. Site selection was determined by fresh water supply, advantage for

defense and accessibility to harbors and water transportation. Fields beyond the town limits were cleared for farming and cultivated by the various townsmen, who first retained residence in the town and later moved to primitive cabins on the farms as Indian hostility abated.

In the town tradesmen carried on their various occupations for the benefit of the colony and infant industry developed around the grist mill, the saw mill and general store. Here was the center of the religious and social life. The town government was patterned



THE ORIGINAL "AMERICAN" CITY (C) by International.

This Hopi Indian village of Walpi is in the Arizona desert, 112 miles from Holbrook, Arizona, and is 250 feet above the floor of Keams Canyon, having been built on the commanding summit of a walled mesa for protective purposes. It would be impossible for invaders to scale the rocky cliffs on which it rests. Indians still live here in the same primitive ways of their ancestors.

according to the model of the mother community in the particular European country from which the inhabitants came or upon the charter or grant of power under which the colony was established.

In North America, the English colonized most of the Atlantic seaboard, with a Dutch colony around the mouth of the Hudson River. The French pre-empted the sections north of the St. Lawrence and around the mouth of the Mississippi. Spaniards sought

the warm climate of Florida and established St. Augustine, the oldest town in North America.

Today, who would think of selecting a site for a new town with reference to the possibilities of defending it against military or naval attack? The defense factor seems to modern men relatively unimportant as a condition to consider in locating settlements. In ancient times, however, this factor was all important and few early unfortified towns "lived to tell the tale."

Ruins of walls of many European towns still exist to excite the wonder of travelers. Occasionally, in the older countries, cities still maintain their ancient fortifications. But where in North America or Australia, continents colonized in comparatively recent times, will there be found a walled town? It is true that early colonists settled in America about rude forts and stockades, where they resorted in case of attack from Indians, but walled towns were never known in this country as they existed in ancient and medieval times.

This does not mean that important modern coast and border cities are left unprotected. Powerful defense guns, located in positions to command harbors and rivers, protect seaboard cities in nearly all countries and international boundaries are frequently patrolled by soldiers operating from army posts and forts nearby. Instead of a settlement being placed so as to afford easy defense, as was necessary in the past, the modern city grows up irrespective of military advantage or disadvantage and defense is afforded as needed by the city wherever located.

Available food and water supply is still as important, if not more so, than in early ages. Settlements cannot become towns, nor towns become cities unless there is obtainable sufficient pure fresh water to meet all the needs of the community. This water supply must be free from contamination so that it may be used for drinking without danger to health. Manufacturing requires great quantities of water and this also must be readily available. In the era of the Greeks and Romans, the water supply had to be relatively near to settlements although the ruins of several aqueducts still indicate the engineering skill of the ancients in contriving ways of bringing fresh water long distances for use of communities.

Today, Los Angeles brings the greater part of its water 230 miles by aqueduct from the Owens River valley in the Sierra Nevada Mountains. The second longest aqueduct in the world, 110

miles long, supplies New York City with water from the Catskill Mountain streams. Tulsa, Oklahoma, draws water from the Ozark mountains, a distance of 60 miles. A city without a single well within its confines can now exist and become important if there is, within reasonable distance, pure water in sufficient quantities which can be piped to supply the community needs. It is, however, now true that a settlement would never start in a location where fresh water was not immediately available and in this respect the origins of twentieth century towns is no different than those of the first century.

In this era, food supplies can be carried long distances to meet community needs and this, probably, is one of the most important factors that has made possible the development of cities of a size far beyond the greatest of ancient times. New York could not exist with only its immediate hinterland to draw food from. The prairies of the west furnish meat, the fields of North Dakota and western Canada supply the grain for flour and the whole world food for this and other mammoth cities. In ancient times, the fields and forests surrounding the town were the major sources of food supply, therefore, settlements were started in locations where the immediate neighborhood was fertile and fruitful.

Religious motives alone do not today actuate the creation of many settlements. While every community has its place for religious worship, it may be said that the church follows the community and not the community the church. Monasteries do not attract settlers as they did in the past. The temple on the hilltop was the magnet which drew ancient man, in many instances, to locate his home nearby and caused the establishment of many villages which have since become important cities.

Religions of modern times emphasize righteous living which is not dependent upon shrines, images and places of public worship. The ancient found his religion in the observance of forms, attendance at shrines, and the worship of images. To be religious and to obtain the protection of the gods, he regularly offered sacrifices upon the altar of his particular deity, and as he felt the constant need of protection from the unknown and the understood forces of nature, he sought proximity to the temple as a place of abode. This dependence was skillfully fostered by priests and oracles who, thereby, were enriched and guarded in the pursuit of their particular activities. While certain cities such as Salt Lake City, Utah, and

Zion City, Ill., have originated in this age because of religious fervor and devotion, yet the practice is the exception rather than the rule.

It is probably true today, as it was yesterday, that communities without the presence of religious institutions would seldom attain greatness and importance. Religion and the influence of churches and their adherents have done more than can be measured to promote the development of great cities and the success of urban life. The civic conscience of church members is ordinarily acute and contributes to observance of law and order which is an absolute requirement in urban life.

Great towns and cities of former times were those best located to obtain trade advantage. In this particular, modern cities are similar to their ancient counterparts. Commercial importance came to settlements located upon the highways of travel, where river met ocean, or lake, or along the shores of navigable streams. Since the advent of railways, trade follows rail routes and settlements grow up at intersections of railways and water courses. This tendency in city growth, though different in form, carries the same relative importance today as it did two thousand years ago.

A new factor, machine industry, has in the past century assisted materially in the development and growth of really great cities, and to develop new cities from small towns. While in ancient times industry existed in a primitive handicraft stage, yet it could not be considered as a prominent factor in either the location or development of settlements. The mechanical era, the epoch of manufacture and invention, has wrought many changes in community life. Towns with little commercial advantage have become cities because of the presence of some important manufacturing industry, which has attracted people and has fostered the creation of competing industries. Handicraft industry of the ancients sought to supply only the needs of the immediate family of the artisan and the wants of his neighbors. Factories today supply the needs of innumerable thousands and become, from the number of persons employed, comparable in size to many American cities of earlier years.

Attempting to compare a city of the ancient world with the huge communities of today is a process of relating in detail the advances brought about through the civilization of mankind. A congregation of people living in close proximity under some form of central municipal authority might be considered a definition of

a village, town or city. In this respect cities of earlier times are the same as those of today. Perhaps the streets and public places are much alike in fundamental purposes, but, in plan, much different. Structures used as dwellings and public buildings in ancient times would scarcely be recognized as such by modern man. The comforts of city living were unheard of in ancient times. Sanitation did not exist and streets and public places were used for all purposes. For cleanliness they would not now compare favorably with a poorly kept barnyard. Waste waters and sewage was permitted to drain into the streets, domestic animals wandered about at will, garbage was thrown about promiscuously and almost anything could, and did, find a resting place in the public highway.

Human habitations were mere shelters, squalid and filthy in most cases. There were no heating devices except open fires, no artificial illumination except such as was afforded from blazing fires and lighted fagots. This condition applied, chiefly, to the houses occupied by the mass of the populace. Homes of the wealthy were often palaces, with every comfort and rude convenience the age afforded, surrounded by spacious gardens, cared for by slaves and servants.

During the middle ages conditions of living were only slightly improved. Some streets in European cities began to be paved toward the end of the twelfth century. Paris was the first and London the last of the great medieval cities to pave streets. Street-cleaning service was practically unknown and the refuse of the dwelling was cast into the highways for dogs and pigs to consume. Domestic water supply was obtained from wells located in back yards, and whatever supply of water was needed for power and industrial purposes, was secured by damming a creek or river and diverting a part of the water through a mill race.

Street lighting, by artificial means, did not exist until about the sixteenth century. Before that time each citizen, who dared to venture forth at night, provided his own light by carrying a candle, lantern or torch. Travel on streets and highways at night was very unsafe. Not only were accidents common, due to the rough conditions of the public highways, but thugs and robbers took advantage of darkness to perpetrate crimes. The police protection afforded was through the voluntary service of citizens, who took turns acting as town watch. Disastrous fires were frequent owing to the lack of fire protection and the congested and

squalid manner of living in cities. Contrast such conditions in medieval towns and cities with civic life today. Fire and police protection is furnished at public expense, streets are cleaned frequently, sewers drain away waste from buildings, streets are brilliantly lighted and public systems furnish, abundantly, pure water for everyone.

In early days sole methods of transportation were afforded either by vessels plying upon waterways, or by oxen and horses. Those who could not afford to use such meager facilities were compelled to walk from place to place. Streets were narrow in many towns and cities and seemed to have been designed solely for pedestrian travel. Such streets usually followed old trails. This condition tended toward congestion of population and forced townspeople to live close to their work. Contrast the city of today with its network of street railway systems, elevated trains and subways, and the automobile and truck as means of affording transportation within the city and beyond its limits. A worker may now live miles from his place of employment without suffering discomfort or delay in his daily activities. Because of this improvement in intra-city transportation, living conditions for the worker have been vastly improved.

Machinery has transformed manufacturing from the handicraft to the mechanical stage and instead of small shops of the early times, there are, today, mammoth factories where many are employed to operate machines in the process of manufacture. Production costs and retail prices have consequently been reduced as a result of quantity production and many articles that were luxuries in comparatively recent times, and available only to the favored rich, have been brought within the purchasing power of ordinary workmen of today. Hours of labor have been shortened and conditions of living much improved as a result of this mechanical era in industry.

In ancient and medieval times only the upper classes could afford schooling. Workers lived and died without being able to even read or write. No public system of education existed. Artisans were trained under the apprentice system, their only means of applied education.

Only in the field of recreation and amusement does living in cities of today compare with ancient and medieval times. The Greeks promoted great public games and contests, feasts and pageants. The

Romans provided games and contests to satisfy "the rabble." In the middle ages entertainment was provided often at town expense, by minstrels and strolling players who presented primitive dramatic productions. Pageants were popular, performing animals and circuses were favorite forms of amusement. There were also athletic feats and public games of all varieties.

In the modern city many and various forms of amusement are possible but little different, in fundamental plan, than existed centuries ago. Games and contests are enjoyed as much today as they were yesterday. Mammoth circuses tour the country, exhibiting in towns and cities. Feast days and public holidays provide interruption from the ordinary schedule of working days. While many of these forms of entertainment were afforded to the populace of centuries ago at public expense, today practically everything demands an admission fee to be paid by the patron.

Cities are recognizing each decade, more and more, the importance of providing great parks and open spaces for public use. In this particular times have changed greatly. Little of this nature was afforded the citizens of the town and city of past gone centuries. To obtain a breath of uncontaminated air, they had to go to the country. This they did not do because of distance and a failure to recognize the importance of fresh air and sunshine in daily living.

Those cities of today that had their origins in ancient times have undergone marked changes in the process of adaptation from one era to another. Cities that were great in former centuries, of which we know little or nothing today, were unable to meet changing conditions and declined in relative importance in competition with other rising communities which exhibited a more progressive and modern spirit.

Review

1—What was the characteristic social grouping in ancient civilization?

2—Discuss early city life as exemplified in Greek and Roman cities.

3—What may be considered as the forerunner of the city?

4—What primary requisites determined locations of prehistoric settlements?

5—For what reason were "walled cities" constructed?

6—Where were "city states" a characteristic form of political organization?

7—Name prominent cities of ancient times founded primarily as trading centers.

8—What cities of the ancient world were formed as colonies of other cities?

9—Describe the villages and towns of the middle ages.

10—What European cities originated in medieval times?

11—Name the oldest city in America.

12—Compare the importance in ancient and modern cities of the following factors:

(a) Defense.

(b) Food and water supply.

(c) Commerce.

(d) Industry.

13—Is the defense factor considered today in locating a settlement?

14—What means are taken to protect modern coast and border cities?

15—What means are used today to supply cities with abundant drinking water regardless of convenient location?

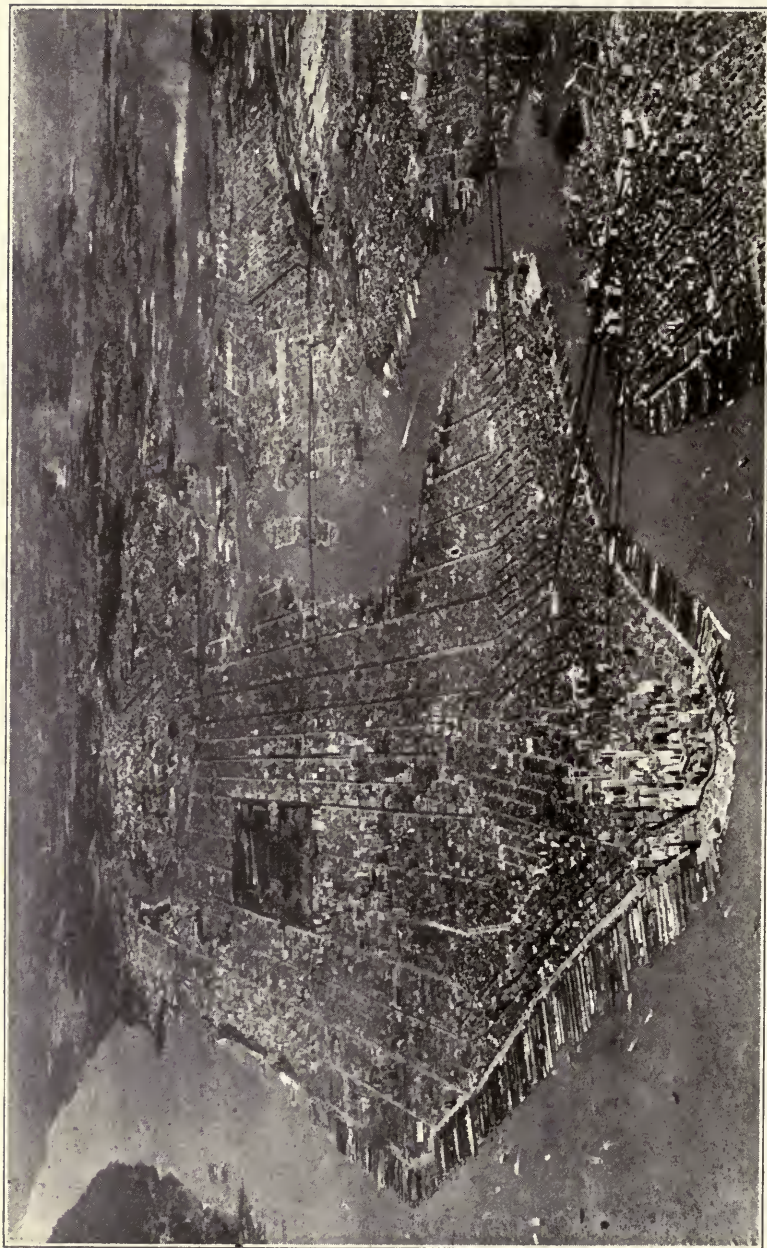
16—Does the religious motive influence greatly the formation of settlements in modern times?

17—Discuss the era of machine industry as a factor of importance in the founding of towns.

18—Compare the living conditions of city dwellers of ancient and modern times.

19—Compare local transportation in towns and cities of the ancient times with the modern.

20—Discuss and compare recreational facilities.



NEW YORK, THE WORLD'S GREATEST CITY

This remarkable airplane view of New York shows the entire city in perspective, with the Hudson River on the left, the East River on the right, and a portion of New York Bay in the foreground. Lower New York, with its towering skyscrapers, and its well organized shipping interests, is shown in the lower portion of the picture, while Central Park stands out plainly in the central portion of the island. The fourteen great avenues may be seen extending northward from the older portion of the city.

(C) Aerial Camera Corp.

CHAPTER 3.

FACTORS DETERMINING LOCATIONS OF CITIES

The defense factor important in early times—Food and water supply—Topographical features—Religious motives created settlements around shrines—Capital cities—Resort cities—Importance of intersecting trade routes and favorable geographical location of the site—Settlements about manufacturing enterprises.

Cities, towns and villages of earliest days were located primarily to afford defense to their inhabitants against enemies of mankind. This factor, which was paramount in primitive times, has persisted in modern years, so that within the past century, in new countries, towns and villages have frequently been established in places best defended in case of attack.

Around the Roman camps on the borders of the Danube and the Rhine, and surrounding the Cossack camps in southern Russia, people congregated primarily to be near protection and remained to establish what now are famous cities.

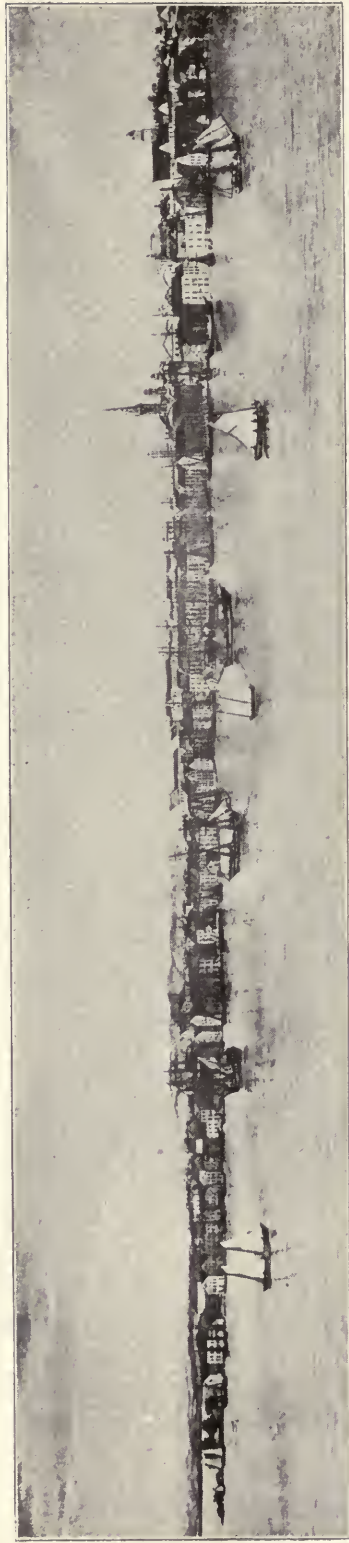
Problems of defense caused Venice to be located on islands in the bay, Paris on a river island, London in the midst of swamps, Athens around the Acropolis, Rome on seven hills, and Halifax, and Québec, on high promontories overlooking the sea and river.

The Swiss lake dwellings, the village on the hill top, the walled town on the plain or in a valley have been referred to heretofore as characteristic of ancient and medieval times and were so located to afford maximum defense against common enemies of ancient man. The walled city continued to be built down through the middle ages and into modern times. Certain European cities still maintain their ancient walls. Located on a hill top and surrounded by a wall is Carcassonne in southern France.

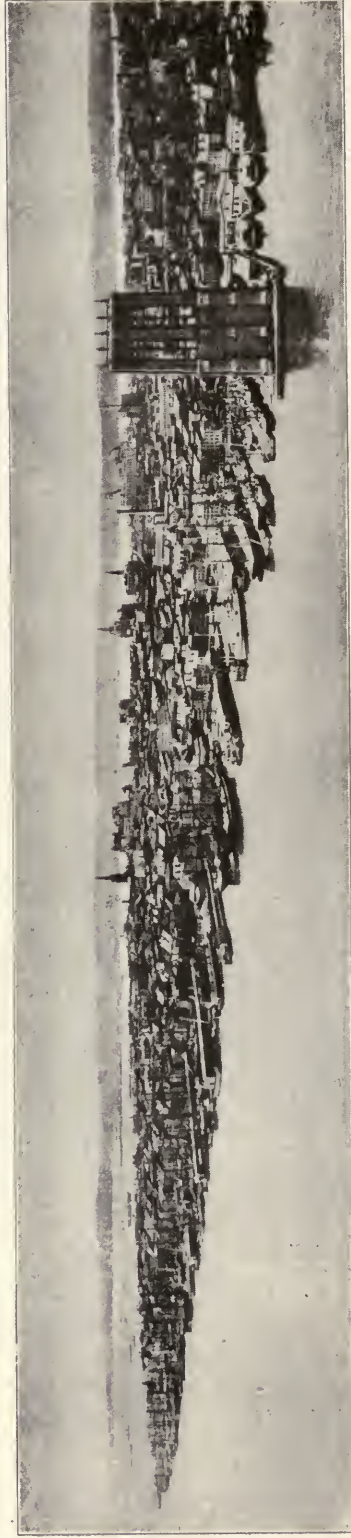
London originally was a walled city. Paris was surrounded in early days by high ramparts. Jerusalem was similarly protected. Wall Street, New York, was the original site of a structure for the defense of the village.

America's forefathers established forts along the Atlantic coast, many of which later lost their martial character and developed into modern cities. Stockades such as Fort Worth, Tex., and Fort

THE EVOLUTION OF A CITY



SKYLINE OF NEW YORK CITY IN 1798 WITH BUILDINGS ALL FOUR STORIES OR LESS



NEW YORK SKYLINE IN 1876 BEFORE THE ADVENT OF THE ELEVATOR AND STEEL FRAME BUILDINGS



NEW YORK IN 1908 FOLLOWING THE EXTENDED USE OF ELEVATORS AND STEEL FRAME BUILDINGS



NEW YORK SKYLINE IN 1928, SHOWING EXTENT TO WHICH HIGH BUILDINGS DOMINATE LOWER NEW YORK

Comparative photographs used by courtesy of Otis Elevator Co.

Wayne, Ind., were established by early settlers and soldiers pioneering in a wild country, as a means of protection against a common enemy.

Defense against Indian attacks caused the pioneers of the west, exploring the wildernesses of North America, to build stockades at strategic locations around which developed settlements which grew into thriving cities of today. Within the fort, a scattered population seldom gathered. Within sight, however, the settlers tilled their small farms, carried on trade and crude hand industries grew up. Village government, always primitive, was exercised under the strict suzerainty of military authority. Detroit was a border fortress, likewise Pittsburgh, Cincinnati, Cleveland, Albany, Memphis and Winnipeg.

Where villages and towns were located an abundant supply of fresh water was necessary. Second in importance were fertile fields where grain could be cultivated to supply the food needs of men and animals. In early times springs of water, small streams and rivers were favored points near which villages were situated. There had to be everything necessary for living at any season. Herds needed pasture in summer and fodder in winter. If forests were nearby, game was available for fresh meat. An examination of the sites of ancient towns always discloses the presence of water supply and usually the availability of food stuffs.

Particularly in ancient times the religious motive was responsible for the founding and later development of towns and cities. Some location was selected for the building of a temple, usually a hill top or plateau, easy to defend. Near this temple, as fitted his temporal power, was located the palace of the chief or king, and under the protection of the temple of the gods and the palace of the king, a population gathered. Priests and soldiers and the retinue of the ruler required accommodations nearby. Shopkeepers and artisans located close by to serve the needs of the regal establishment and others in the community.

The attraction of being near the center of spiritual and temporal authority was sufficient to draw other settlers, seeking favor or protection under the well-guarded fortifications surrounding the temple and the palace. So there arose a city which was both the religious and political center of the territory. This history of city growth is particularly a feature of ancient settlements in Egypt, Mesopotamia, Asia Minor and oriental lands.

In medieval times towns grew up around monasteries because of protection afforded and opportunities for trade. Many sought refuge in monasteries, pilgrims resorted to them, alien merchants visited the monks and dealt with the business agent of the monastery, buying and exchanging goods. Artisans and workers, serving in the shops and agricultural domains of the monastery, lived round about. English towns that grew up in this way are Abingdon, St. Albans, Oxford and Coventry. The word "saint" as a part of a town name very often indicates origin influenced by the presence of a religious center.

Religion has been important in the founding and growth of some important American cities. Salt Lake City was established by the Mormons in 1847 and owes its growth and importance to the fact that it is the permanent home of that religious sect. A desert valley was developed into a wonderfully fruitful section which was later aided by the discovery of large and valuable mineral deposits in the vicinity.

Mission hamlets were founded by the Catholic Order of St. Francis throughout California in 1769 and thereafter led to the development of the cities of San Diego, Los Angeles, Santa Barbara and San Francisco. The earlier missions also grew into importance in the states of Florida, Louisiana and Texas, and were responsible for the founding of St. Augustine, San Antonio, El Paso and other important southern communities.

Occasionally a town will be found which has been made to order to accommodate some religious sect. Zion City, near Chicago, home of Dowieites is an example. Benton Harbor, Mich., has doubtless benefited to some extent and gained wide notoriety through the proximity of the converts of the House of David.

Some cities have been founded primarily as places for the residence of government. The outstanding example of this character is Washington, D. C., founded to be the political capital of the United States and for no other reason. Everything centers about government machinery. Conditions in Ottawa, Canada, are much the same. Australia has a new "made to order" capital, Canberra, where a model city such as Washington, D. C., has come into being during the past several years.

Some cities are essentially political centers. The capital city of a country is usually its most important one and the same is true of provincial capitals. Around the seat of government, as a nucleus,

men congregate to participate in the functioning of political and governmental machinery, to serve those who hold public office and to be near those who are in political power and have national or state prominence. Thus political cities grow without, as a general thing, the impetus of manufacturing or commerce.

Certain locations are peculiarly favored by natural advantages, such as healthful climate, mineral springs, or beautiful scenery, and have become sites for villages that have later developed into sizable cities. Man is pleasure seeking and at the same time is constantly in search of health and well being. Ponce de Leon strove to find in his explorations of the Florida country, a fountain of perpetual youth. Mineral springs and baths are the fabled fountains of youth and health, attracting many people with various ailments, and where waters have peculiar healing and curative properties, settlements will grow up, sanatorium and health resorts are established which many go to. The butcher, the baker and the candlestick maker promptly open shops to accommodate the needs of visitors. Many stay for permanent residence and through this process a community becomes a town and often grows into a city. Mount Clemens and Battle Creek, both in Michigan, Carlsbad, Germany, and Hot Springs, Arkansas, are notable examples.

In search of recreation and pleasure, man seeks resorts along the seashore and in the mountains, and cities like Atlantic City, Miami, Pasadena and Colorado Springs have resulted.

In modern times, the settler seeking a home locates his dwelling to satisfy his fundamental needs for water, fuel and food. As a result, many small, widely scattered settlements have grown up. It is now not unusual for small counties to have from twelve to fifty settlements incorporated into villages, towns or cities with inhabitants numbering from twenty-five to five thousand and more.

Today it is chiefly geographical superiority which renders certain communities capable of developing from small settlements to large cities. Occasionally there is what may be termed a "made" city such as Gary, Ind., and Long View, Wash., which have been created almost overnight, for a definite business purpose according to preconceived plans of some industrial corporation. Washington, D. C., was established as the seat of government of the United States of America and laid out by Major Pierre Charles L'Enfant in 1791 according to a definite plan. Such cities cannot

be said to have developed along natural lines but are artificial in both inception and growth.

Fully as important a factor in the historical growth of cities, and most important in the development of the modern city, is the commercial advantage of the chosen site. For this reason cities are located on the banks of rivers, on the shore of a lake or ocean, especially at the mouth of a river; near rapids and water falls affording water power, and at the intersection of important trade routes whether by land or ocean, road or rail, or by lake or river, and, perhaps, in the future, by air.

Trade routes always seek the line of least resistance between the sources of raw materials and the ultimate market therefor. Wherever transshipping in transportation occurs, there is a logical site for a city. Ocean and lake ports and river cities owe their locations to this factor which has had so great an influence on modern civilization.

New York was fortunately situated at the mouth of the great Hudson River. Little did the founders of that city realize that they had selected a strategic location affording easy approach to the productive lands of the middle west, at that time unexplored and undeveloped. It so happens that there is but one topographically easy route through the Appalachian Mountains of North America, which was later used by a great railroad for its right of way from Buffalo to Albany, thence down the eastern bank of the Hudson. This has concentrated the flow of export trade from the middle west to this great seaport and has encouraged exporters and importers to ship goods from and to New York for distribution, because of the direct, easy and ready transportation facilities to northern and western American points.

Bays and gulfs furnish excellent harbors for shipping, and as a result, where other conditions are not adverse, cities have usually grown up on the bank tangent to the innermost curve of the waterline. Such cities are Galveston, Baltimore, Philadelphia, San Francisco, Seattle and Vancouver, in the United States, and Liverpool, Genoa, Hamburg and Christiania, in Europe.

Ephesus and Utica, cities of the ancient world, were ruined when the sea closed their harbors. Today it is often with difficulty and great expense that the harbors of port cities are maintained. Constant dredging is the price of a useful commercial harbor, adequate for ships of the present day.

In the days before steam railroads, important overland transportation generally followed watercourses. In America the pioneer, starting from New York and seeking a home in the middle west, journeyed by boat up the Hudson River to Albany, overland to Buffalo, thence by boat on the Great Lakes to Cleveland, Toledo, Detroit, Chicago, Duluth or some other struggling frontier port.



HOW SEATTLE BUILT ALONG THE SEA SHORE

Cities bordering on large bodies of water usually have their origin at the water's edge, but grow back from it as they enlarge. This shows how Seattle has built up, terrace above terrace, back from the shores of Puget Sound.

Should he choose to go farther south, his route lay over the mountains to Pittsburgh, down the Ohio River to Wheeling, Cincinnati, Louisville, St. Louis, or even farther southward on the Mississippi to New Orleans. Freight transportation to the interior was effected over the same routes.

It is quite easy, with these facts in mind, to account for cities like Buffalo, Cincinnati, Cleveland, Detroit, St. Louis, Montreal,

and other communities where water facilities have played an important part in their growth.

Cities frequently originate at or near the mouth of a river where ocean and river navigation meet, as at Philadelphia, New York, New Orleans, Buenos Aires and at the navigable headwaters of rivers where streams flow into or meet to form the river, as at St. Paul, Albany, Richmond and Vicksburg.

St. Louis, Cairo and Omaha are located at the junction of two



(C) by Underwood & Underwood.

A CITY THAT A CANAL BROUGHT INTO EXISTENCE

Formerly but a bit of desert land, the little peninsula in the picture became the site of the City of Suez, following the digging of the great Suez Canal. The dark tortuous stretch at the right is the deep channel for ships, the lighter space at the left is dry land at low tide, but flooded at high.

rivers or branches of the same river. So also is Pittsburgh which stands where the Allegheny and the Monongahela rivers converge to form the Ohio.

Louisville is an example of a city growing where a portage of goods became necessary in order to avoid river rapids. Often an obstruction to one method of transportation caused the location of a settlement at a point favorable to continuation of transportation by different means. Such cities are Richmond, Fort Wayne, Syracuse, Evansville and Toledo.

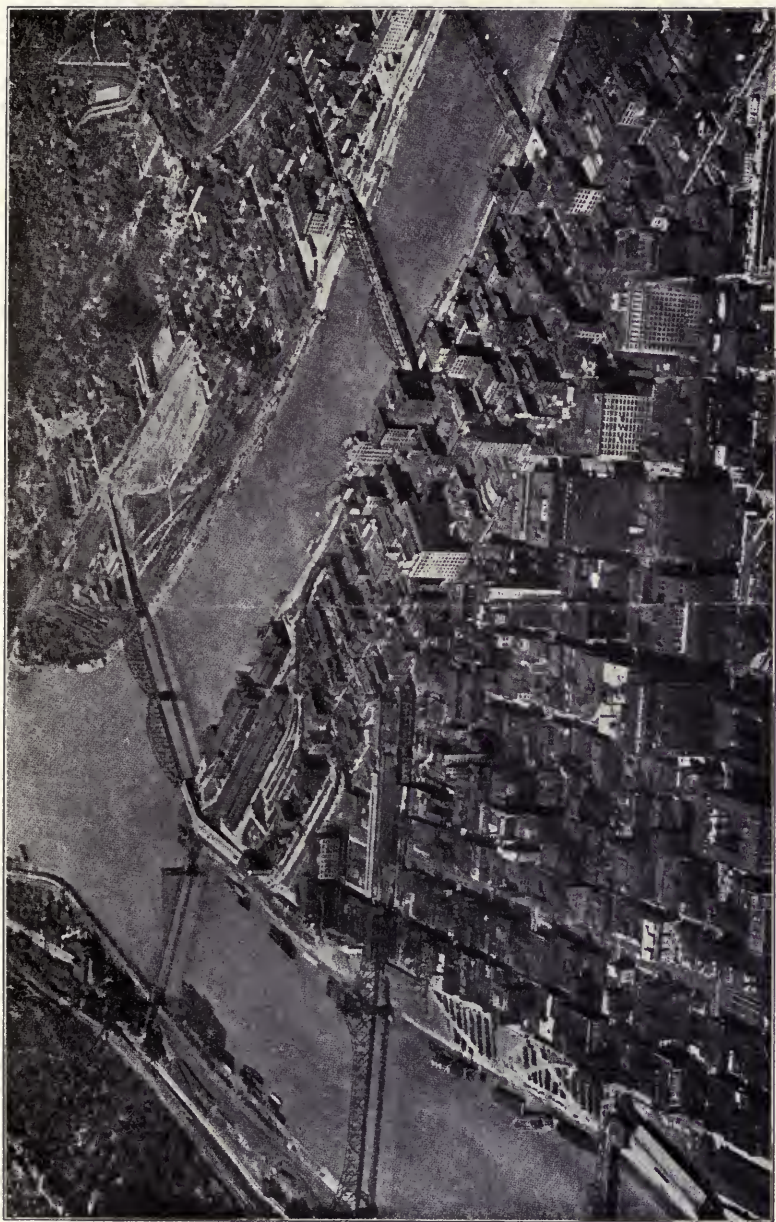
Ferry terminals are potentially city sites. In a wilderness without roads, bridges and other conveniences of travel, pioneers sought safe fords across rivers. Often settlements grew up on either bank of a river where a ford was practicable as in the case of St. Paul and Minneapolis. So, likewise, villages developed to satisfy the needs of the traveler, where the ferryman plied his flat bottomed craft from shore to shore. For example, Rockford, Ill., is located at a ford on the Rock River, and Harrisburg had its inception at a ferry across the Susquehanna River.

Canals have frequently encouraged the growth of settlements. The Suez Canal was responsible for the development of the cities of Port Said and Suez. Colon and Panama are important as cities only because of the Panama Canal. Buffalo owed its early prestige largely to the Erie Canal. Cleveland's first active business growth was coincident with the opening of the Ohio Canal in 1827. The Welland Canal has also contributed its share to the importance of Buffalo, Toronto and other Canadian ports, by making possible through lake-to-seaboard transportation. With the development of steam railroads, canals, other than ship canals accommodating large lake or ocean vessels, declined in importance. Some have been abandoned, and many inland cities located upon their banks, which once were prominent communities, have lost their former importance.

Before railroads were established, trade routes by land created cities at their intersections, as in Paris, Moscow, Constantinople, Vienna and Berlin. Comparable with these trade routes in Europe are the old American trails where cities grew up at intersections with water routes and other highways.

Foothills of a mountain have often attracted settlers, and where trade routes crossed mountains, requiring in ancient times a change in the character of transportation, towns were founded. In a degree this is true with railroads when division points in mountainous districts are established in order to change engines before and after a pull through heavy mountain grades. Illustrating the former type are Milan, Augsburg and Turin; Denver and Altoona are examples of the latter.

Council Bluffs, Topeka, St. Joseph and Duluth were outfitting points for pioneers over old western trails, just as the Canadian pioneers of today have stations for outfitting before plunging into the northern woods.



(C) Aero Service Corporation

PITTSBURGH GREW UP AT A JUNCTURE OF TWO RIVERS

The Pennsylvania steel city now finds its main business district restricted to a small triangle, where land values are high, and thoroughfares are narrow.

Had modern railroad engineering existed when transmountain and transcontinental railroad systems were built, the progress and growth of many cities located upon certain existing water routes might have been materially altered. When first conceived, railroads were seldom considered rivals to water transportation for carrying freight. Railroad lines were built paralleling and following rivers and water courses. Rights of way were established through mountains in the easiest manner, regardless, often, of distance. Routes usually were chosen along waterways as being the easiest and cheapest to construct. Their influence therefore strengthened existing cities located along water courses where such railroads touched.

Manufacturing cities are usually located either close to the source of raw materials, or near a principal market. Extractive industries such as lumber mills, flour mills, iron foundries, smelters and the like, usually locate either close to the source of supply of raw materials from which they manufacture their products, or near adequate fuel supplies, that being the economic meeting point for the assembling and treating of materials.

Pittsburgh is noted for its steel industry, located there, not primarily because of the proximity of iron ore, although some deposits were found nearby, but on account of the nearness of the coal mines of Pennsylvania, West Virginia and Ohio and because of transportation facilities, both by rail and water. Saginaw, Bay City and Seattle are lumber markets located originally close to large forests.

It may be seen, therefore, that most American cities have originated at "focal points where traffic routes converge." ⁽¹⁾ These traffic routes may be lake and river, ocean and river, rail and water, trails and river or lake, or intersecting rail and market routes.

It is true that while manufacturing has been, in recent years, the greatest factor promoting the growth of American cities, yet few cities originated around an industrial establishment. There are exceptions such as Gary, Ind., where a city was built around a steel industry, and Pullman, Ill., around a factory building sleeping cars.

The following may be considered as definite factors influencing the site location of cities:

1—The defense factor—originally very important.

2—Availability of food, fuel and water supply, without which no settlement can exist.

(1) Article by Prof. R. H. Whitbeck on "Selection of Urban Sites" in "Urban Land Economics," published under the auspices of the Institute for Research in Land Economics and Public Utilities.

3—Favorable topographical features. Rough, rugged mountain ranges and barren desert wastes seldom give birth to a town.

4—Religious motive influencing people to settle around a temple, shrine or monastery.

5—Centers of government—Political capitals.

6—Special climatic conditions and medicinal springs.

7—Locations favored for recreational reasons.

8—Geographical superiority of location where commercial activities are able to develop at focal points of trade and travel.

9—Around manufacturing enterprises, large enough to establish and maintain entire cities.

No one factor can be said to be the sole cause for the origin and growth of a settlement. It is rather the combination of a number of favorable influences which has attracted settlers and created the city.

Review

1—Name the most important factor of determining the location of an ancient settlement.

2—Discuss the importance of convenient and abundant water supply as a requisite in the location of a town of early days.

3—Describe the Swiss lake dwellings from the standpoint of defense.

4—Name a French city where the ancient walled defenses are maintained.

5—What prominent capitals of Europe were originally walled towns?

6—Did the defense factor play an important part in the location of early American towns?

7—Name important American cities that originated as border fortresses.

8—Of what importance was the religious motive in the formation and location of certain settlements?

9—What American city was founded as a haven for a certain religious sect?

10—Discuss the location of "capitol" cities.

11—What is meant by "town location with reference to natural advantages"?

12—Are cities ever founded primarily for recreational and health advantages?

13—Name five American cities essentially recreation and health centers.

14—To what extent does geographical superiority of a given town site influence its growth?

15—What is the controlling factor in the location of modern towns and settlements?



(C) Underwood & Underwood

LONDON'S IRREGULAR STREET PLAN

With St. Paul's cathedral as a center, streets in this part of famous old London wander aimlessly about, starting nowhere and apparently ending nowhere. City planners today provide for the future by planning thoroughfares long before they may be needed, creating increment for future years.

CHAPTER 4.

TYPES OF CITIES

Cities classified according to type—Description of the various economic services performed—Commercial—Industrial—Political—Recreational—Farming—Educational centers—Tendency of cities to specialize in some special field of commerce or industry—Sub-classification according to business of the community—Cities devoted largely to single industries.

Cities may be classified according to the principal occupations and interests of most of their inhabitants. Thus it may be said that a city on a harbor, whose residents are chiefly engaged in promotion of the shipping industry, is maritime. A city favorably located to the reception of raw materials, where great factories have grown up, may be said to be industrial. One where trade predominates is commercial in character.

A comprehensive classification of communities is given by Professor R. D. McKensie as follows: (1)

"First, the primary service community, such as the agricultural town, the fishing, mining, or lumbering community which serves as the first step in the distributive process of the outgoing basic commodity and as the last stage in the distributive process of the product finished for consumption." . . . (The community devoted to extractive industry.)

"The next type of community is the one that fulfills the secondary function in the distributive process of commodities. It collects the basic materials from the surrounding primary communities and distributes them in the wider markets of the world. On the other hand, it redistributes the products coming from other parts of the world to the primary service communities for final consumption. This is called *the commercial community*."

"The third type is the industrial town. It serves as the locus for the manufacturing of commodities. In addition it may combine the functions of the primary service

(1) See Chapter 3, pages 66 and 67 in "*The City*" by Park and Burgess, published by The University of Chicago Press, 1925.

and the commercial types. It may have its local trade area and it may also be the distributing center for the surrounding hinterland. The type is characterized merely by the relative dominance of industry over the other forms of service. . . ."

"The fourth type of community is one that is lacking in a specific economic base. It draws economic sustenance from other parts of the world, and may serve no function in the production or distribution of commodities. Such communities are exemplified in our recreational resorts, political and educational centers, communities of defense, penal or charitable colonies."

Some communities originate in one class and develop later importance in distinctly different types of service. Detroit, originally a border fortress and fur trading post, became prominent as a commercial city but in recent years has become industrial, leading the nation in the manufacture of automobiles. Such shifts are rather the rule than the exception for cities that today are considered important in the economic life of the country.

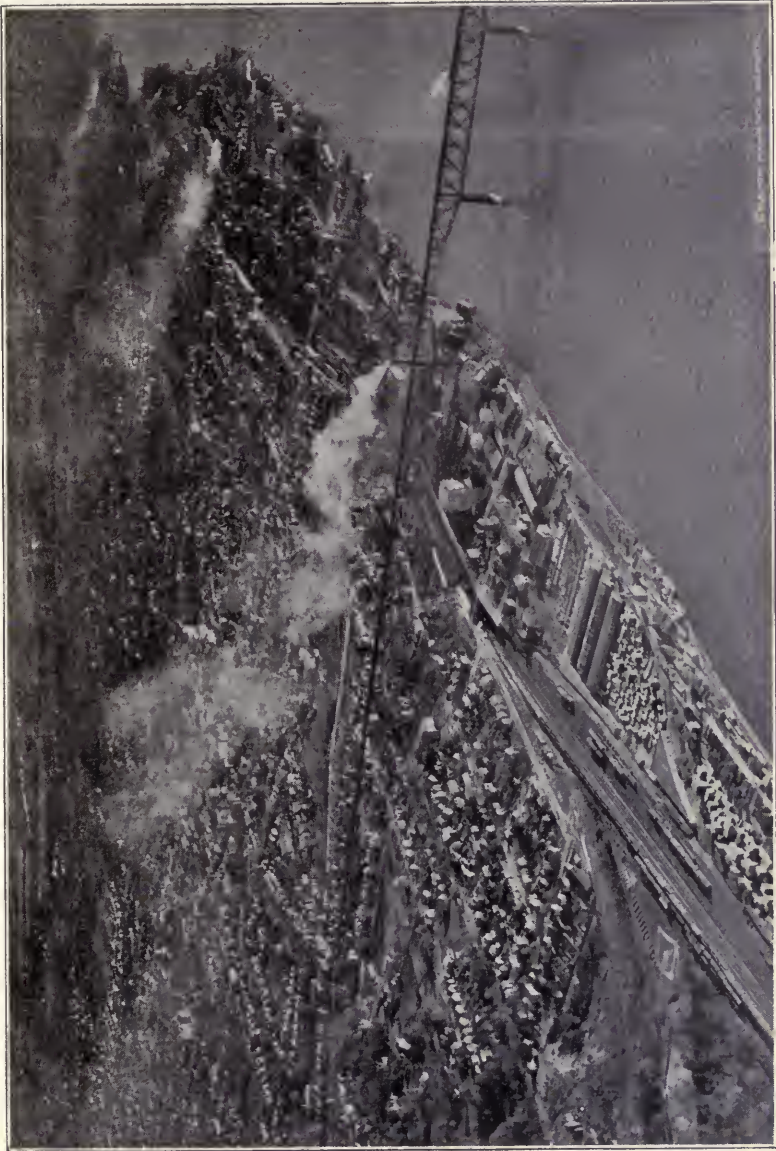
Therefore, if communities are classified as of any particular time, a few years may cause such a classification to become obsolete. References to the dominant economic functions of certain cities and classifications as such in this treatment must be considered as of the present.

It is difficult to draw hard and fast lines of demarcation and thus make exact classifications, for in every city varied occupations are followed and there is an intermingling of all lines of endeavor. Here only predominating characteristics are used as a basis for the following classification:

1. Cities devoted principally to commerce.

- (a) Seaports, such as Baltimore, Boston, Galveston, San Francisco, New Orleans, Seattle, Victoria and Montreal. New York City combines almost all characteristics but probably should be classified as a seaport since it is the principal shipping point on the Western Hemisphere.

- (b) Lake ports, such as Buffalo and Duluth, Cleveland, Chicago, Detroit, Toledo, Hamilton and Toronto represent a class of lake ports whose importance commercially is equalled or exceeded by their position industrially. They are both lake ports and industrial cities.



(C) Underwood & Underwood

A TYPICAL RIVER CITY

Poughkeepsie, N. Y., as seen from the air, is typical of cities which spring up on river banks. Starting at an original settlement such cities spread out in various directions back from the waterfront. Railroads and vessel companies usually preempt the riverfront for commercial uses instead of at least a portion being reserved for the use of citizens for recreation purposes. In the above picture may be seen a part of the great steel bridge spanning the Hudson River.

(c) River cities, such as Louisville, St. Louis and Memphis.

(d) Railroad terminals and junctions. Such cities are commercial chiefly because of the necessity for transfer of rail routes. Chicago is a good example of a city functioning as a terminal for many railroads. Because the city forms an eastern terminal for great transcontinental lines and a western terminal for eastern lines, it has developed into a commercial city second only to New York City. Here the products of the western states are transferred to eastern rail and lake routes for carriage to the markets of the middle west, and the eastern seaboard, and eastern products are shipped westward. Indianapolis is a typical commercial city, although it serves its state also as a capital and as one of Indiana's manufacturing centers. Atlanta, Georgia, Springfield, Ill., and Winnipeg, Man., are other examples.

2. Industrial Cities—Those devoted primarily to the manufacture of commodities.

(a) Cities devoted chiefly to extractive industries, such as Saginaw, located near the former Michigan forests, having large lumber mills for preparing lumber for the market. Despite exhaustion of Michigan's forests, Saginaw has continued as an important lumber center because of the concentration there of capital invested in the industry. Birmingham, Ala., which has large and important steel mills operating to convert iron ore and coal mined in the state into steel for industry, and Muskogee, Okla., whose large oil refineries are located near the source of supply.

(b) Cities devoted to manufacturing. This type is dependent upon the extractive industries to obtain and prepare for use the raw materials. Whereas the extractive industries sell only to manufacturers, the manufacturing industries market their product in its final form to jobbers, stores and other distributing agencies. Flint, Mich., is an example of this kind of city, devoted to the manufacture of automobiles.

3. Farming centers—Usually not nearly so large in population as either the commercial or industrial city of the same relative importance. Provo and Logan, Utah;

Phoenix, Ariz., and Calgary, Sask., are typically agricultural cities, located in rich farming districts. Fargo, N. Dak., and Aberdeen, S. Dak., are cities catering chiefly to the needs of the farmers of the surrounding country. In this classification belong most of the small settlements of the world. Including these small settlements, this type or classification far outnumbers all others combined. Every country hamlet belongs in this class.

4. Political cities—those devoted to the requirements of national, state and local governments.

Outstanding in this class is Washington, D. C., the seat of the government of the United States. This city was founded for this purpose alone. It has practically no manufactures and little commerce and is not the center of an agricultural territory of any importance. Everything centers about the government. Conditions in Ottawa, Can., are similar. Columbus, O., and Albany, N. Y., are cities belonging to the same class, as indeed are many state capitals. The following cities are political in type: Santa Fe, N. M., Montpelier, Vt., Annapolis, Md., Tallahassee, Fla., Sacramento, Calif., and Carson City, Nev. It must not be assumed that the cities which are political in type have no industry and have no important commercial enterprises. Columbus, for instance, has a number of important manufacturing plants. Usually cities that are political in character and the seat of the government of the state are centrally located within the state and are served by important railroad systems. Some have, in fact, become commercially prominent for this reason.

5. Recreational and health resorts—communities serving as playgrounds or resorts for those seeking to maintain or regain physical health.

Atlantic City, San Diego and Palm Beach represent American cities where the chief function is recreational in character. Battle Creek, Mich., and Hot Springs, Ark., are resorted to by those who desire the benefit of special care to regain lost health.

6. Educational centers—cities and towns growing about colleges and universities. With the development in America of large universities, many villages where these

institutions are located have grown to be small cities with population dependent for support almost entirely upon serving the university and its students. Ann Arbor, Mich., and Berkeley, Calif., are notable examples of cities of this sort. Such cities also function as primary service communities for the surrounding territory.

The character and number of advantages that a particular city may be able to offer frequently determines what its principal economic function will be. Coast towns located upon the shores of good harbors are almost certain to grow in a commercial way. Cities having the benefit of important intersecting railway systems are likewise favored for commercial growth.

Cities to expand industrially must be so located that materials for use in a particular type of manufacturing may be economically assembled. Abundant skilled labor is necessary, with adequate capital for financing the marketing of the products. Good transportation facilities are also essential.

There is always a tendency for a city to specialize in certain lines of manufacturing. Early start and special labor conditions play important parts in the causing of this specialization, as does proximity to raw materials and easy accessibility to market centers. Transportation facilities are all important to the growth of a city either commercially or industrially.

As a result of this tendency to specialize in certain lines of commerce and industry, certain cities may be sub-classified according to the predominating business conducted there. For instance, Akron is known as the rubber city, because of the many large rubber industries located in that neighborhood; Gary, the steel city, and Detroit the automotive center of the world.

There are many instances of American cities and towns which depend largely upon a single industry for their success and maintenance.

Troy, N. Y., is famous for its output of shirts and collars.

Gloversville, N. Y., is known as the center of the American glove industry.

Lynn, Mass., and other towns in that territory, manufacture large quantities of shoes though there is a distinct tendency to move this industry nearer to the source of raw materials.

Pittsburgh, Gary, Youngstown, and Birmingham are known principally as iron and steel centers.



JUNEAU, UNCLE SAM'S "FARTHEST NORTH" CAPITOL

This interesting picture from the air shows the capitol of Alaska, nestling in a cove along a river which is ice bound much of the year. Almost every foot of level ground is used for building purposes.

The town of Belding, Mich., has its principal interests in the silk industry.

Danbury, Conn., is a great hat manufacturing center.

Duluth, Minn., depends largely upon lake shipping, huge tonnages of ore, grain and other products being transshipped to lake freighters during the course of a shipping season.

Minneapolis and St. Paul are known as the flour cities of America. Flour made in the Minnesota twin cities has a reputation that helps sell it.

Elgin, Ill., is noted throughout the country as a center in the production of butter and dairy products.

Meriden, Conn., long ago established its preeminence as a center for the manufacture of silver table ware.

Rutland, Vt., for years has been known as the producer of high grade Vermont marble products.

The little town of Barberton, O., near Akron, has a reputation as the biggest match producing center in this country.

Tampa, Fla., is known for its scores of cigar factories, located there because of high duties imposed upon Cuban made cigars. This city is the port closest to Cuban raw tobacco markets and has the advantage of being able to obtain many skilled cigar makers from Havana.

Many more instances could be given where towns and cities have grown up and prospered through the development of a specialized industry. While cities should promote the manufacture of special articles which can be more economically produced there than elsewhere, it is also apparent that all cities should strive continuously to build up a diversification of industry. This insures the continuance of important payrolls when events occur which may disrupt the special business which represents the city's chief source of income.

Occasionally a city, whose inhabitants are principally engaged in one line of endeavor, will, by reason of changing conditions, gradually become engaged in another field of enterprise. Tulsa, Okla., grew from a small town in an agricultural district to a center for the oil industry, due to the discovery in recent years of rich oil fields nearby. Long Beach, Calif., had a similar experience, developing originally as a resort city, and suddenly expanding commercially when oil was discovered.

Cincinnati during the middle and end of the nineteenth century

was one of the leading commercial cities in the middle west. It was greater in size than Chicago, Cleveland or St. Louis, and commanded an important river trade. Later as traffic on the Great Lakes developed and steam railroad transportation was improved, other cities rose to rival Cincinnati. Settled by Germans, the brewing industry had become important. Prohibition killed this industry. Cincinnati changed, therefore, in relative importance, not by reason of decrease in size, but chiefly due to the advance of certain other cities better located geographically to meet conditions of modern industry and commerce.

To summarize, cities and towns located upon the highways of travel tend to develop commercially. Those favorably situated with reference to agricultural, mining, lumbering and other districts where raw products are produced for the markets of the world become primary service communities in the commercial scale. Industrial cities are ordinarily found at the economic meeting place for the various materials necessary to manufacturing processes and where the essential labor and financial services can best be obtained. Occasionally, the influence of an early start in some industry will offset these particular factors and cause a city to be prominent in a certain industry without much natural economic reason. Political cities are ordinarily located as near to the geographical center of the territory served as possible, solely for convenience. Recreational and health resorts seek advantageous climate and medicinal springs and waters.

Review

- 1—Give a classification of cities according to types.
- 2—What is meant by “dominant economic function” of a city?
- 3—Classify cities according to economic function.
- 4—Name five American river cities.
- 5—Name five cities where the chief function is industry.
- 6—Give the primary type of industry carried on in each of the above.
- 7—Name five cities located as junction points on intersecting trade routes.
- 8—What is a “farming center”?
- 9—Give names of three cities of this last class.
- 10—What is a “political city”?

11—Name three cities of America that may be termed chiefly political.

12—Give the principal industries in the following cities:

- (a) Lynn, Massachusetts.
- (b) Gary, Indiana.
- (c) Danbury, Connecticut.
- (d) Minneapolis and St. Paul.
- (e) Barberton, Ohio.
- (f) Tampa, Fla.

13—What is a “one industry town”? Name one.

14—Of what importance is “early start” in an industry to a town?

CHAPTER 5.

URBAN GROWTH

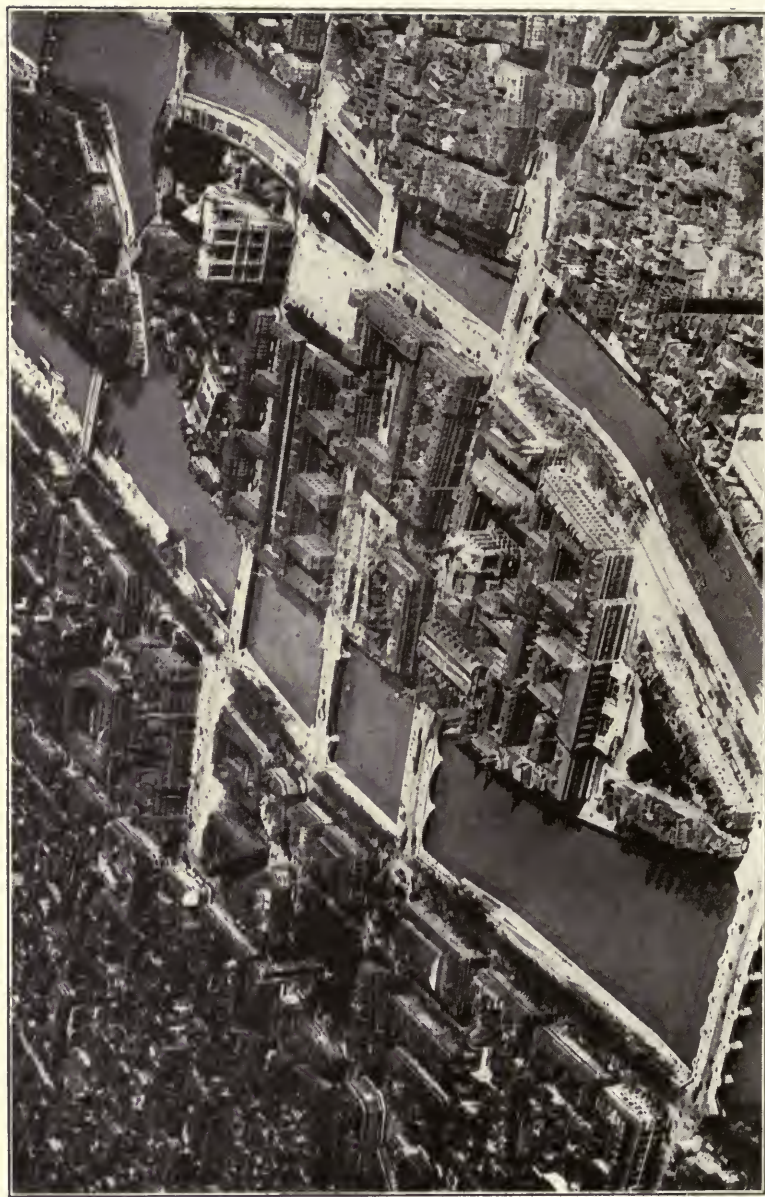
Direction of growth usually away from point of origin—
The process of city growth—Larger cities result from simultaneous expansion of many local communities—Transition in urban land utilization described—Decentralization vs. centralization—Influence of industry and commerce on city growth.

Growing cities necessarily expand territorially in order to accommodate increase in population. If this increase is maintained over a period of years, marked changes occur in the structure of a community. New districts are brought within the urban area, residential subdivisions develop around the outer margin of the city, the central business district broadens and industries find new plant locations where consistent land values exist and labor is available. Concurrently with this expansion dwellings are constructed to provide shelter for newcomers and those old residents who desire change, buildings are erected for expanding business and industry, and new streets are platted and opened. This, in brief, is the story of the growth of any city.

Without population increase as a basis, communities do not expand. Such is the history of many settlements that started with what appeared to be great promise. Many agricultural communities, not possessing substantial commercial or industrial enterprises, reach a maximum population of five or six thousand persons and seem thereafter to be stagnant.

The process by which a community expands to meet the needs of increasing population and commercial activity, is one of the most complex considerations in the study of cities.

Most settlements originate parallel to some highway of travel and traffic. This may be tangent to an ocean harbor, a lake shore, a river bank, a public road, or a mere trail. In recent years towns have frequently sprung up at some point adjacent and parallel to a railroad. At first a few houses are built on one side of the road, then a general store appears, soon a church and a school are erected. More houses follow, some upon the opposite side of the highway, and, as more people join the settlement, other businesses are housed to take care of the needs of the villagers.



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THE HEART OF PARIS

On this little island in 56 B.C., Paris, the pride of France, was founded. The location was chosen because its inhabitants were able to defend it easily from enemies. Later, the city spread in all directions. Today nine beautiful bridges span the Seine River. On the island are some of the finest buildings in Paris.

At first, dwellings and business buildings are neighbors, side by side. Then as growth continues and more stores are necessary, these businesses seek location near to established merchants, and through the process of specialization in the service performed general stores cease to fill the entire needs of residents, and butchers, bakers, dry-goods merchants, grocers, bankers and all the many kinds of businesses found in an urban community find locations in the infant business district of the growing town. Residences on the main street very gradually give way to business blocks and seek new locations on streets intersecting or paralleling the main business thoroughfare. Some frequently find sites further out the main street and remain there until again pushed aside by steadily expanding business.

Cross roads are favorite points of origin for settlements and thereafter the process of growth is usually away from the point of origin. If there are no major topographical barriers, orderly growth is a spreading-out process in all directions away from the center, but this seldom occurs. A river town or a settlement on a sea or lake shore is initially blocked by the watercourse from expansion in at least one direction, and so usually seeks growth at right angles to the barrier. Toronto, Seattle, Detroit and Montreal are examples.

Natural features such as hills, valleys and ravines frequently check expansion of a town or city in some direction. Artificial barriers such as cemeteries, parks and public grounds, railroad yards and industrial plants may cause the same result.

Normally, towns grow along highways leading to the nearest community neighbor. This neighbor may be a small village only a short distance away or it may be a large city miles away. Market roads carrying heavy commercial travel are magnets in the process of city expansion.

The tendency of urban populations in growing communities is to overflow and to extend over wider areas. These areas become incorporated in the community life and ultimately are absorbed as a part of the larger municipality unless state or national boundaries interfere. This situation now exists in the case of Chicago whose metropolitan area extends into Indiana, with New York, extended in actual community life into New Jersey, at Detroit where Windsor, Ontario, is really a suburb of that city.

In recent years city officials have been engaged in studying extensive areas bordering the corporate limits of cities and attempting to formulate plans for the development of the future city.

A great city of today is not alone the result of growth and spreading out of one settlement, but is really the simultaneous expansion and merging of a number of neighboring settlements, which have steadily grown together to become the greater city. With rapid transportation facilities now available to city dwellers, whereby distance is measured in minutes and not in miles, it is possible for a worker to live far away from the central business district where he is employed. This fact makes any territory, even though not physically contiguous to the corporate municipal boundaries, a part of the metropolitan area if facility of transportation is such that the resident of such an area may carry on his daily work in the city itself.

The study of the expansion process of cities is still in its infancy and while standards are being established whereby research studies can be made, yet no orderly and adequate system of city growth has yet been formulated. Many facts are known about the development of urban communities but the relation of these facts one to another is comparatively little understood. As more attention is given to city and metropolitan planning, and to the correlation and organization of information about how and why cities grow, it is evident that ultimately the science of urban development will be charted and mapped.

It seems, however, that the tendency of an urban community in the process of expansion is to develop various zones which may be described as (1) the central business district, (2) the twilight zone, surrounding and adjacent to the central district, where transition from residential to business use is occurring, (3) the zone where workmen and apartment dwellers reside, (4) then the principal residential district which surrounds all other zones, (5) and finally the suburban communities. Professor E. W. Burgess charts this "ideal construction of the tendencies of any town or city to expand radially from its central business district" in his chapter on "The Growth of the City" in "The City," a book of which he is co-author. (1) His chart is a plan of concentric circles with the inner one representing the "loop" or central business district of the city. Encircling this is another circle, denominated by him as the "zone in transition" within which lies an area which is being invaded by light manufacture and businesses desiring to be close in to the high value district but unable to afford location in the midst thereof.

(1) "The City," by Park and Burgess—pages 50 and 51—University of Chicago Press.

Zone three of the Burgess chart surrounds the last two just described and is termed the "zone of workingmen's homes" which he describes as being inhabited by workers in industries who desire to live within easy access of their work. This area also includes apartment buildings containing suites of two and three rooms occupied by bachelors and married couples without families, who are engaged in the so-called "white collar" occupations.

The "residential zone" is the largest circle. This Professor Burgess describes as containing higher class apartment buildings or exclusive single family homes. The "commuter's zone" lies beyond the urban confines within a thirty to sixty minute ride of the central business district.

This conception is, of course, idealistic and is never found in exact counterpart in any city. Moreover, as Prof. Burgess points out, there is always in process a pushing out from an inner zone to the next larger one, so that conditions are constantly changing. A business district tends to swell and absorb more and more of the so-called transition zone, and the boundaries of this "twilight" area are constantly being extended although real estate activity therein is stagnant for the most part. The chief value of such a description is to graphically picture the structural layout of a city according to land utilization. It is a sort of "rule of thumb" or measuring stick which can be considered in the study of any city.

As cities attain larger populations, a process of decentralization commences. The downtown business district ceases to be the sole location for retail trade. Here and there at main outlying street intersections, sometimes miles distant from the center of the city, secondary retail trade areas grow up. In these a shopper may patronize department stores, groceries, shoe stores, drug stores, theatres, markets, and purchase almost anything that may be acquired at retail in the main downtown business district. Land often becomes very valuable for commercial use and competition is vigorous to obtain strategic locations. The Cottage Grove and 63rd Street district in Chicago, the Euclid-East 105th Street district in Cleveland, the Highland Park area in Detroit, and the business section of Hollywood in Los Angeles are examples of such sub-business centers. Hollywood is, indeed, the most important example of such a typical sub-center in any city in America.

Suburban areas have their local business districts as well, but these must be distinguished from secondary commercial districts.

Smaller businesses cater to the neighborhood wants of the suburbanites much the same as in a small isolated town.

Growth of some large and important cities has been due to the creative genius of certain men who have established there some new industry which has grown and prospered and has eventually become the chief business around which the industry of the city has developed.

Some communities have grown where there are natural advantages which are not available elsewhere. Niagara Falls, N. Y., is industrially important because of the water power afforded by the



THE HIGHEST INCORPORATED CITY IN AMERICA

It is Leadville, Colorado, which is built away up in the Rocky Mountains beyond Denver at an elevation of 10,200 feet. In the background is Mt. Massive, elevation 14,404 feet.

presence of the great natural cataract in the Niagara River. The town of Muscle Shoals, Ala., has grown up about a great dam built by the United States Government, on the Tennessee River. New towns and cities have grown up about mines, oil wells, and mineral deposits.

The phenomenal growth of Detroit, Pittsburgh, Akron, Grand Rapids, Hollywood, Long View, and cities of similar character is due to the fact that certain industries were established in these communities. These industries, starting inauspiciously, developed into

larger enterprises and later came to dominate the industrial life of the community, controlling markets and influencing other industries of a like character to seek location there.

In Akron, for instance, the rubber industry had its inception through the activities of Dr. Benjamin Franklin Goodrich, a young chemist, who started a rubber factory in Akron. The original plant employed thirty-five workmen. The same plant, grown to mammoth proportions, in recent years had more than twenty thousand employees at one time. Others became interested in the possibilities of the rubber industry, which in those days was in its infancy, principally because of the ability to secure laborers possessing a knowledge of working in rubber, Akron was selected by competitive firms. Gradually, the city which offered no special advantages except that it had an abundant supply of fresh water suitable for making rubber products, grew important as a rubber manufacturing city.

Then came the remarkable growth of the automobile business and with it the manufacture of rubber tires. The city grew and flourished, real estate values soared, building began on a big scale, yet operators were unable to furnish housing facilities for the thousands of workingmen flocking in to obtain the high wages offered. Thus an industry monopolized the attention of the city. Concerns manufacturing accessories began to settle in Akron. Machinery used in the rubber industry also came to be made there.

Detroit's experience and growth has been of a similar character. Until 1900 Detroit was a quiet, conservative, residential city, possessing a variety of prosperous industries. Several small automobile plants located in Detroit, among them one owned by Henry Ford. Ford had a tremendous struggle to obtain capital, but toiled earnestly along, making improvement after improvement in his "horseless carriage" until he conceived the idea of mass production on a single type of small car. The business soon grew to mammoth proportions, and his fame was heralded around the world. Other automobile manufacturers, noting Ford's success, located nearby to make other models of automobiles, influenced largely by their ability to secure skilled labor.

As the industry grew, scores of associated businesses, devoted to furnishing parts and accessories for automobiles, sprang up, flourished and helped to build Detroit's reputation as a motor manufacturing center. Detroit-made machines became known around the world. Bankers in Detroit financed new automobile enterprises with

liberality, advertising agencies specializing in automobile "copy" located there and soon began sending out propaganda that Detroit led the world in the manufacture of motor cars. Substantial growth occurred, real estate expansion followed, high real estate values were in evidence and fortunes were made in real estate operations.

Grand Rapids became a furniture center through a somewhat different cause. The hardwood forests of Michigan for years furnished an extensive supply of raw material for the first small furniture factories which were established there. Furniture could be manufactured at lower cost than elsewhere and, in addition, an army of skilled workmen was being trained. Factory after factory was established with the result that today even with the passing of plentiful supplies of raw materials, Grand Rapids retains this business prestige and has its regular furniture exhibits, visited by store buyers from all over the country. Styles in furniture are determined in Grand Rapids just as styles in women's clothes originate in Paris.

Chief factors in the development of cities prominent in special manufacturing lines, are:

1—Ease in securing capital for financing factory operations and sales. Bankers are thoroughly familiar with the risks of the city's principal business and are willing to encourage and sustain such enterprises when skillfully conducted.

2—Workmen trained in the manufacture of the particular product, available in sufficient numbers at reasonable wages.

3—Adequate transportation facilities. Transportation company employees in such cities become familiar with handling the particular product in a quick and efficient manner. Through combinations of producers better freight rates are usually obtained and the shipping of goods is taken care of promptly and effectively.

4—Centralization of concerns handling raw materials essential to the industry, so that materials are easily obtainable in any quantities required. Deliveries can be made quickly and at a minimum cost to the manufacturer. Better qualities of raw materials are often more available than to the isolated manufacturer at a distant point. .

5—Establishment of plants manufacturing machinery and supplies necessary to the industry. Detroit, for instance, has a tremendous line of allied trades where many machines necessary to the production of automobiles are quickly available. Even skillful inventors can be secured to translate new ideas into actual, workable machinery.

6—Advertising prestige in being located in a city prominent in any industry. Akron tires, Troy collars, Danbury hats, Detroit automobiles, and Grand Rapids furniture speak for themselves.

7—Support afforded the specialized industry by local organizations such as Chambers of Commerce, which institutions in such cities are largely dominated by men interested in the principal industry of the city, who have intimate knowledge of the problems involved in the business.

8—Research facilities afforded by centralized industries. Rivalry between large, prosperous companies results in the establishing of laboratories and testing departments. New inventions in the industry are fostered, and inventors honored and compensated when they contribute new ideas for cheapening a process or evolving a new use for the chief products produced.

9—Centralized sales markets. Rival companies join to provide special salesrooms where products can be best displayed.

10—Proximity to the source of supply for raw materials used in the business. The growth of adequate railroad transportation facilities has diminished the importance of this factor. Akron, for instance, is many thousands of miles from rubber plantations.

11—The dominant creative genius of certain individuals who have pioneered in certain industries and are thoroughly familiar with the problems presented by each. This, perhaps, is the most important factor which has led to the development of cities along special manufacturing lines.

The story of the growth of cities through trade and commerce is less striking than the tale of industrial expansion and its effect on city growth. Most cities located on the highways of world commerce have enjoyed steady expansion. This factor has been active in creating cities since the beginning of the simple trade relations between men of different communities.

Great seaports and lake cities have grown important because they have been situated where rail and water highways meet, necessitating a transshipment of goods from one carrier to another. Chicago, Toledo and St. Louis have prospered as centers of rail commerce.

Services required at terminals of rail and water routes give employment to many persons who must live nearby. This adds population as commerce passing through a city grows. Not alone this, but markets are created where commodities are bought and sold.

Duluth and Buffalo on the lakes, Baltimore and San Francisco on the ocean are true types of commercial cities.

As heretofore noted, agricultural towns and other communities, where engaged chiefly in primary commercial distribution, ordinarily do not expand beyond a very modest population. Occasionally where this type of community attracts a substantial industry manufacturing the products gathered from the hinterland, a new factor of growth is introduced which gives a new impetus toward city expansion. Witness the growth of several southern cities where plants have been located to utilize cotton grown nearby.

Resort cities grow in proportion to the popularity of the particular form of recreational or medicinal service performed. Such cities have a large transient population and are greatly affected from season to season by current climatic conditions and business depressions in other parts of the country.

Thus it may be seen that cities expand by certain definite processes of external growth to accommodate increases in population. Areas change from one economic use to another as necessity demands. The change is constantly going on in any growing community and is influenced by many factors, accelerated by some, retarded by others. Industry has probably brought about the greatest growth of American cities during the nineteenth and twentieth centuries. Commerce, too, has always been a steady reason for growth.

Review

1—Do communities expand territorially in the absence of population increase?

2—What is the approximate maximum population of a strictly agricultural service town?

3—What is the usual point of origin of a town?

4—Describe the order of development or community growth.

5—Of what importance is a crossroads as a potential point of settlement?

6—What is the modern tendency of urban populations?

7—What is the apparent order of expansion in a growing city?

8—Discuss Prof. Burgess "zone theory" of city structure.

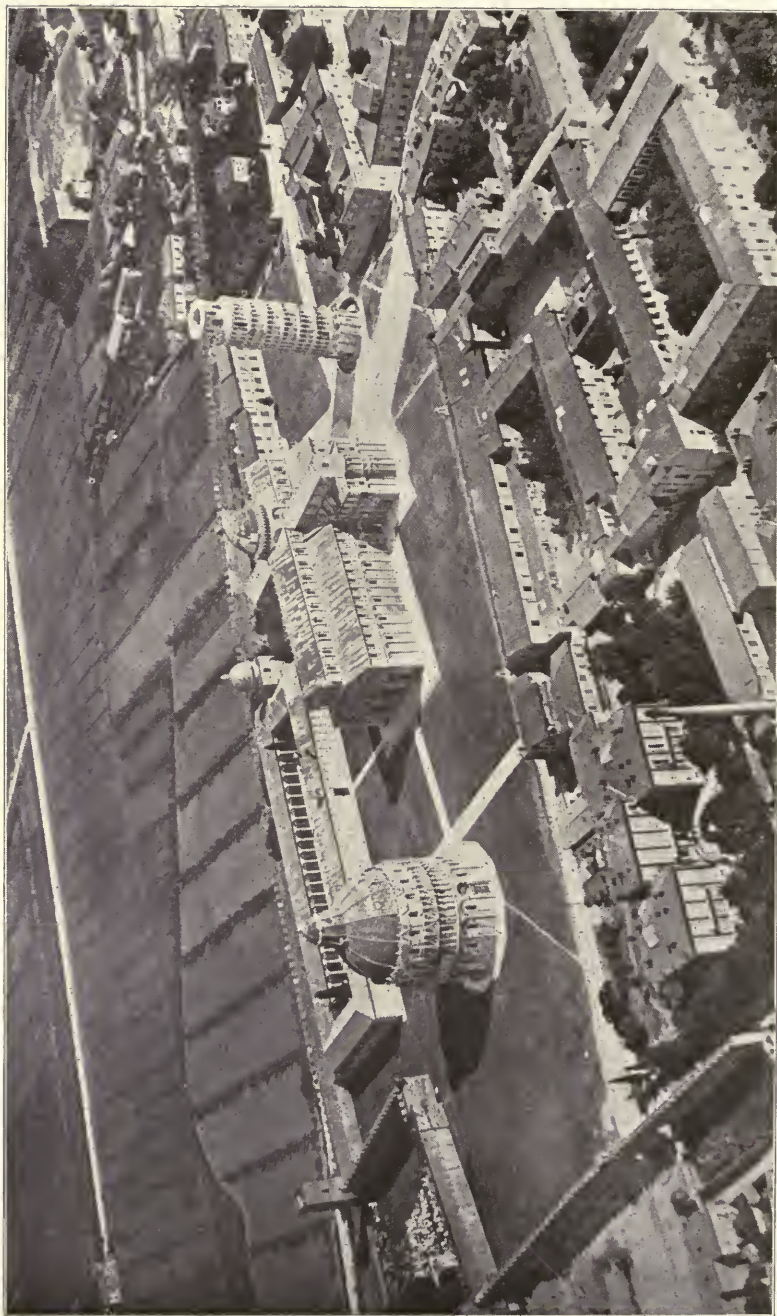
9—Define "suburban area" and "subcenter."

10—What accounts for the rapid growth of Detroit in the twentieth century?

11—Explain the growth in population of Akron, Ohio.

12—Name five factors of importance in the development of a manufacturing city.

13—What factor in your opinion has been most important in the last twenty years in stimulating urbanization?



ANCIENT CITIES GREW UP AROUND TEMPLES

Many great cities of Asia and Europe had their inceptions with the building of a religious temple, where a place of worship was provided for the inhabitants over a large area. Gradually settlements gathered about such places, business followed, and a city developed. Above is the City of Pisa, Italy, with its cathedral and its famous leaning tower. Note the old city wall, while beyond lay the fields, entirely clear of buildings.

CHAPTER 6.

INFLUENCES AFFECTING AREAL EXPANSION

Insistent need for residential areas impels growth—The effect of artificial barriers—Expansion due to accessibility by means of streets and highways—Large industrial enterprises act as magnets—Transportation a potent factor—The subdivider as an agent for popularizing special districts.

Many of the factors which operate to create settlements and cause their growth into towns, continue to steadily force expansion after the city stage is reached. Commerce and manufacturing are the principal factors which contribute to the present day growth of cities. As long as a community maintains its position in competition with other cities as a center of commercial and industrial enterprises, population seems certain to grow and expansion will result.

Assuming that conditions are favorable to increase in population, what factors and influences operate, foster or limit structural growth in one direction or another? Is it possible to chart with reasonable accuracy the course that expansion will take?

Prophesying with definite accuracy the growth of a city either in population or direction is obviously impossible. Many unforeseen conditions may develop which will cause fewer people to seek a particular city as a place of residence and likewise special circumstances may divert directional expansion from its normal course. The course of human activities which operate to influence the physical makeup of a city are not susceptible to accurate forecasting.

It is possible, however, to ascertain how cities have grown in the past and to note the special influences which have caused, diverted or stimulated expansion of city areas in one direction or another. Distribution of the population of a city must be studied and the causes thereof analyzed in order to have a basis upon which to form conclusions with relation to future growth. Transportation, street plan and natural barriers such as hills, swamps, rivers and lakes, all function to control directional expansion of urban communities. What may be a barrier to utilization of urban land for one purpose, however, may be a distinct advantage in another character of use.

After a community is fully established and is attracting new residents within its borders, the demand for new residential districts offers the first important evidence of spacial expansion. Home builders seek high ground upon which to locate dwellings. Such land, ordinarily, is not suitable for manufacturing use chiefly because it is not as easily accessible to rail and water transportation so necessary to industrial activity. Other commercial enterprises hover about the central business district which in American cities has usually grown up about the point of origin of the early town. This high land, if available in or around the city, is quickly preempted by subdividers for residential areas and on the outskirts of any city may be seen in process the subdivision of land, construction of dwellings and thereby the gradual extension of community limits.

Marshes and swales are undesirable for either business or residential use and form a temporary barrier to expansion until such time as the internal pressure of the growing city forces reclamation, whereupon they become available for such uses as other land in the immediate vicinity. In Lower New York, long ago, Beckman Swamp and Collect Pond were obliterated by fills and the land used for commercial purposes. The "Back Bay" residential district of Boston was originally a swamp.

Bluffs along river banks, or overlooking lakes or along the seashore afford scenic outlooks which attract residential developments and thus influence directional growth of a city. Cincinnati's finest residential district overlooks the Ohio River to the east of the city proper. Beverly Hills, the choice residential suburb of Los Angeles is situated along a mountain side, with less desirable homes on the lower lands bordering a business district. What city of any size has not its "Hills and Dales" allotment, in topography if not in name, constantly attracting new home builders and pulling the city toward it?

Watercourses are usually barriers to business development, unless navigable, in which case the shores are used for docks, warehouses, wharves and frequently for railroad rights of way. Cincinnati, Louisville, St. Louis, New Orleans and other river cities can grow at best in but three directions. The same is true of cities located along lakes and harbors such as Buffalo, Cleveland, Duluth, Portland, Seattle and Baltimore.

Steep hills, unless they can be tunneled, as in the case of Twin

Peaks at San Francisco, offer a definite barrier to expansion of residential districts. For business use, hills offer barriers which are usually sufficient to direct growth in a course opposite thereto.

Drainage is an important element to be considered in the selection of areas on which homes are to be built and often determines the use to which available land is put. For many years upper sections of Manhattan Island attracted only the crudest kind of shacks because of the presence of hard granite, which in many places stood exposed in great patches above the scanty neighboring soil. When lots became valuable enough to permit the city to go to the expense of tunneling through solid rock in some districts, for sewers and water mains, the shacks disappeared and row after row of fine apartment houses made their appearance. Great swales, or marshy districts in cities have usually been the last reclaimed for any purpose because of the cost of draining them.

One of the ever-present elements which affects the growth of any city is the presence of artificial barriers, which man must overcome before expansion can follow. One of these is railroads, one or more of which wends its way into or through every growing city. Due to the necessity for making an entrance at easy grade, railroads have often confined themselves to the banks of water-courses or lakes, or to natural depressions which permitted them to make their entry over land which was not particularly desirable for either business or residential use. Many a railroad has preempted the bank of a lake or river which a city later desired for free park or recreational purposes. Chicago overcame this condition by filling out far beyond the tracks of the Illinois Central railroad. Many cities, however, will suffer because a railroad, early in its history seized the bank of a beautiful lake or river as a right of way to reach its destination.

Growth in cities is almost uniformly away from railroads, the immediate vicinities of which are usually given over to manufacturing activities. Rochester and Dunkirk, New York, have inferior business thoroughfares bordering on railroads, but for the most part the character of retail business development along a railroad right of way is unimportant. Growth has ultimately forced expansion over and beyond a railroad in many American cities, causing traffic problems at tracks resulting in the expenditure of millions of dollars for raising or lowering rights of way. Where it is impracticable to do this, tunneling under or bridging over is resorted

to. A barrier may thus be minimized to some extent, yet its presence is ever felt.

A cemetery is usually a barrier against orderly growth. Due to the fact that land employed for cemetery purposes can seldom be obtained for other uses, due to the sentiment attached to burying places and the inability of cities, under the laws of many states, to even condemn for public use, burying grounds often stand as almost unsurmountable barriers to business expansion. If near a residential development, a cemetery is usually considered a blight. The difficulty of securing the consent of lot owners to remove bodies so cemetery land may be put to other use is always present, and facing such a barrier, expansion of business districts generally takes place in another direction.

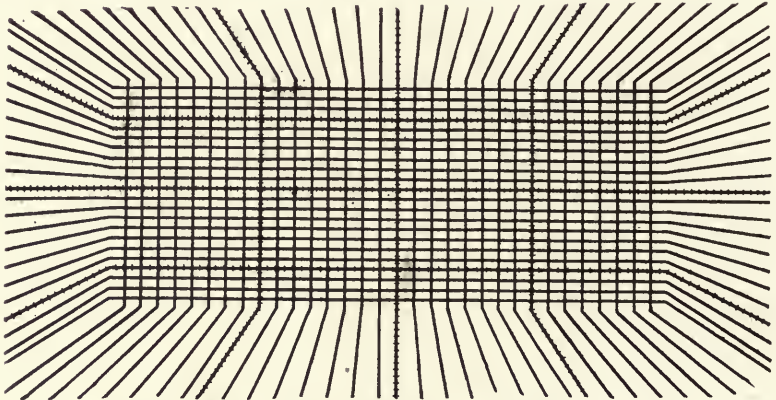


DIAGRAM ILLUSTRATING THE ADVANTAGE OF THRU TRAFFIC ROUTES AND OF A RECTANGULAR LAYOUT OF THE CHIEF BUSINESS AND COMMUNITY CENTER IN THE DEVELOPMENT OF RAPID-TRANSIT ROUTES

Rapid-transit routes are indicated by the ribbed lines

The presence of a very large manufacturing plant, early established, frequently cuts off much land lying beyond it from the benefit of growth that proximity to a downtown retail business area might afford. Such an institution can exercise political influence to prevent highways being extended through its property, isolating great areas of land beyond from short and natural routes to central business districts.

The development of some of the largest and finest residential areas surrounding American cities has been due to the fortunate circumstance that such land has been held in large tracts by a single person or institution, or at least by relatively few persons with

whom the originators of such developments have had to deal. When land has been cut into small farms it is difficult to deal with the many owners and persuade them to sell their holdings to a subdivider. Such owners frequently find it to their financial advantage to sell their property in small lots for inferior residence use. Once built up in this way, a territory lying beyond often continues to develop in the same manner. On the other hand, where a high grade development entrenches itself, the territory lying beyond enjoys the same character of growth, as the pressure within sends high grade home seekers out into new districts.

Legal obstacles sometimes delay or hinder the internal growth of a city in some directions. Large estates are occasionally left to heirs with certain restrictions regarding sale or development.

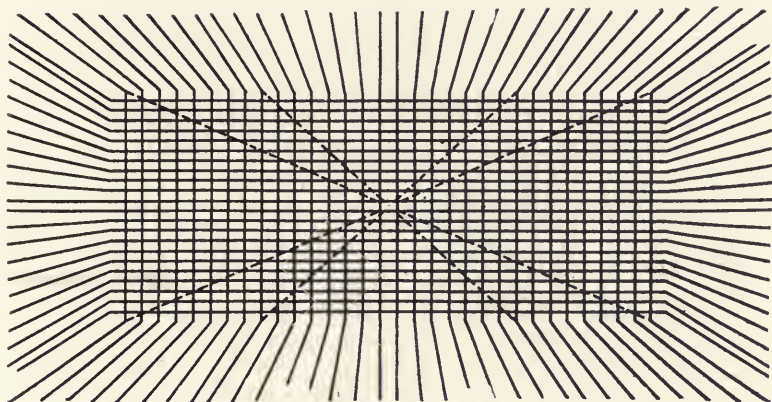


DIAGRAM ILLUSTRATING THE DISADVANTAGE, FROM A TRAFFIC STANDPOINT, OF SUPERIMPOSING DIAGONAL STREETS ON EXISTING RECTANGULAR SYSTEM IN CENTRAL BUSINESS DISTRICT

Contests over wills sometimes take years to settle, holding from present use, land which would otherwise lie in the path of business development. Instances are many where direction of retail business development has been shifted because of some obstacle such as this.

The "won't sell" type of owner is sometimes encountered who definitely holds up or diverts the natural growth of a section. He is usually wealthy and enjoys living in his stately home surrounded by spacious grounds at the very edge of a rapidly expanding business district. He opposes the installation of public improvements because of increased taxes and assessments, threatens to enjoin a neighbor when the latter erects a business block at the edge of

the great man's front lawn, and argues unceasingly with those who attempt to show him that he is obstructing progress and repeatedly refuses attractive offers for his property. Frequently there are several of this type who proceed to hem in a business district and their attitude prevents expansion, sometimes for years. In the meantime, progressive merchants select other streets on which to locate their businesses and a distinct shift in the direction of business district expansion ensues.

A zoning law is a man-made barrier to certain types of expansion. It aims to direct growth in the way it should go, and if intelligently conceived and properly administered, the community benefits thereby. There should be a definite and logical selection, however, of the character of improvements permitted in specified districts to the end that land may be used for its best and highest purpose. An ill-conceived or poorly planned zoning law may be distinctly harmful.

Deed restrictions often prevent the use of land for business purposes in such a manner as to block the expansion of a retail commercial district in the direction of normal growth, and a shift may result which entirely changes the course of internal expansion of central business areas and so affects the entire growth of the city.

Codes sometimes impose limitations upon building construction so as to change the character of use of entire districts. The height, type of building and area covered may be so regulated as to make compliance too costly to produce for the owner a fair return and in this way prevent or divert commercial development.

The presence of public buildings may obstruct or divert the orderly growth of a city district according to its normal use. Hospitals, asylums, prisons, courthouses and city halls, may be in the pathway of business development which will hesitate to leap the gap, fearing that pedestrian traffic will not follow and provide the buying power necessary for business. Many a city has grown out to the site of an asylum, a county hospital or a prison farm and found progress blocked, at least temporarily, in that direction. Public buildings properly belonging in cities are, under modern city planning methods being grouped about parks, where their presence does not interfere with the orderly expansion of business districts.

Golf courses and public parks sometimes are found blocking city growth in certain directions. Such adjuncts to city life are

distinctly desirable and necessary but nevertheless they may exert an influence in shifting the directional growth of any city.

Abnormally wide streets or very narrow ones may have their influence on structural growth. These do not necessarily hinder growth but have a distinct effect upon it. Salt Lake City has many very wide streets and its retail business is confined, for the most part, to one wide thoroughfare, where important business firms insist upon locating, fearing, possibly, the isolation which might occur if they settled on a wide street nearby. Boston, on the other hand, has narrow and in some instances, crooked streets, which impose a handicap to business and its attendant traffic.

Accessibility to various parts of a natural area designed as the site of a city, through means of streets and highways, has much to do with regular and consistent growth. City streets laid out on the square or rectangular plan often compel those who travel from one point to another to make many sharp turns, with attendant loss of time, a condition which the presence of streets radiating like the ribs of a fan from a central point would overcome.

Growth takes place most actively along main arteries which extend out and beyond the potential limits of a city. Thoroughfares extending to nearby towns or cities naturally attract vehicular traffic and are more heavily traveled than streets which extend only a few blocks and end abruptly at a factory, a railroad, or a cornfield. Old time through market roads become automobile highways, business centers growing up at important intersecting thoroughfares. Residential communities cluster about such business centers. It is sometimes puzzling to determine whether business sub-centers attract the subdivisions or the subdivisions are responsible for many of such outlying business centers.

Large industrial plants, located on cheap land beyond the borders of a city, but situated on main highways frequently act as magnets for the promotion and extension of both business and residential development. When Henry Ford located his automobile manufacturing plant in Highland Park, out on Woodward Avenue north of Detroit, it was not long before a substantial business district sprang up, attended by the subdividing of considerable areas of land. As the plant itself expanded and employed more men, neighborhood growth continued, for workmen desired to live within a short distance of their place of employment. In a few years the gap between Highland Park and Detroit was completely filled, the

smaller town was surrounded by the city and what was once merely a large farm area became a hive of industrial business and residential activity.

Growth occurs at business sub-centers and gradually these reach out towards each other, directly affecting internal expansion. Where once stood an old tavern on a stage coach road, a village springs into being with its blacksmith shop, which later becomes a garage, a few stores, a bank, a church, a school and later duplications of all these, until a large and thrifty outlying town is merged with a city which yesterday lay miles away but which today presses up to and passes out beyond, to new territory for needs of constant growth.

Transportation has proven a potent factor in the expansion of cities. Early foot trails, followed first by Indians and then by early settlers, became the rough mud or corduroy roads of our forefathers. The stage coach racked along at four or five miles an hour through dense woods or over open meadows. The taverns were built at main crossroads or near a spring, a lake, or a river, where a water supply was available. Fifty years ago horse drawn cars began slowly to push out from growing towns and crude attempts at grading and surfacing roadways began. Then came the trolley car which promptly doubled the traveling radius of the average passenger. Soon followed interurban lines to neighboring towns, accompanied by local service on steam railroads out of the larger cities. About 1910 the passenger automobile began to come into general use, durable hard surface pavements began to multiply and many cities grew at a high rate of speed. About 1915, passenger busses made their appearance. Through their lower cost of operation and due, perhaps, to novelty, they began to cut into the revenues of the interurban lines which succumbed one after another. Transportation can well be considered a most important element in the expansion of the modern city.

Another and definite element found in many cities is the initiative of subdividers who have evidenced vision and have gone out and created needed home sections, highly restricted and splendidly developed. The Nichols development in Kansas City is known as one of the finest residential districts in America. Roland Park in Baltimore is another instance where a great area has been converted into a fine home section, while the accomplishments of the Van Sweringen brothers in developing the Shaker Heights section

for Cleveland is current knowledge to most students of city growth.

Scarcely a city of any importance in the country has failed to produce some man or men who have realized the opportunity of creating on its borders a great new home section. It is significant that methods employed have been alike in many respects. Such promoters first acquired large tracts of land. Then they carefully planned the layout of streets and highways, adequately improving them before extensive building programs ensued. High class residential restrictions were imposed and their observance strictly insisted upon. Competent, honest salesmen sold the property, for the most part, to buyers who were not so much interested in speculating in real estate as they were in acquiring sites on which to actually erect homes. Certainly this popularizing of large, highly restricted home sections has had a far reaching effect on the growth of many American cities.

Some of the various influences which affect the areal expansion of cities and the distribution of population therein may be classified as follows:

(I) Creative factors which tend to cause cities to spread in one direction or another, such as:

- (a) Highways and streets
 - (1) Market roads between cities and towns
 - (2) Main street thoroughfares
 - (3) Contributory streets
- (b) Transportation lines
 - (1) Interurban routes
 - (2) Intercity bus lines
 - (3) Local bus lines
 - (4) Street surface lines
 - (5) Elevated railways
 - (6) Subway systems
- (c) Regions specially favored topographically for development for certain purposes, such as hilly lands for residence districts, level areas for business sections.
- (d) Special manufacturing industries employing many workers who seek homes in the neighborhood of their work.
- (e) Efforts of groups of men to popularize certain districts, by opening subdivisions, or pioneering in an untried location with a business enterprise.

(f) Miscellaneous influences operating occasionally.

(II) Restrictive influences which tend to limit the directional growth of cities.

(a) Natural barriers.

- (1) Water faults.
- (2) Hills and valleys (for some purposes).
- (3) Marshes and swamps.
- (4) Soil conditions unfavorable to building construction.

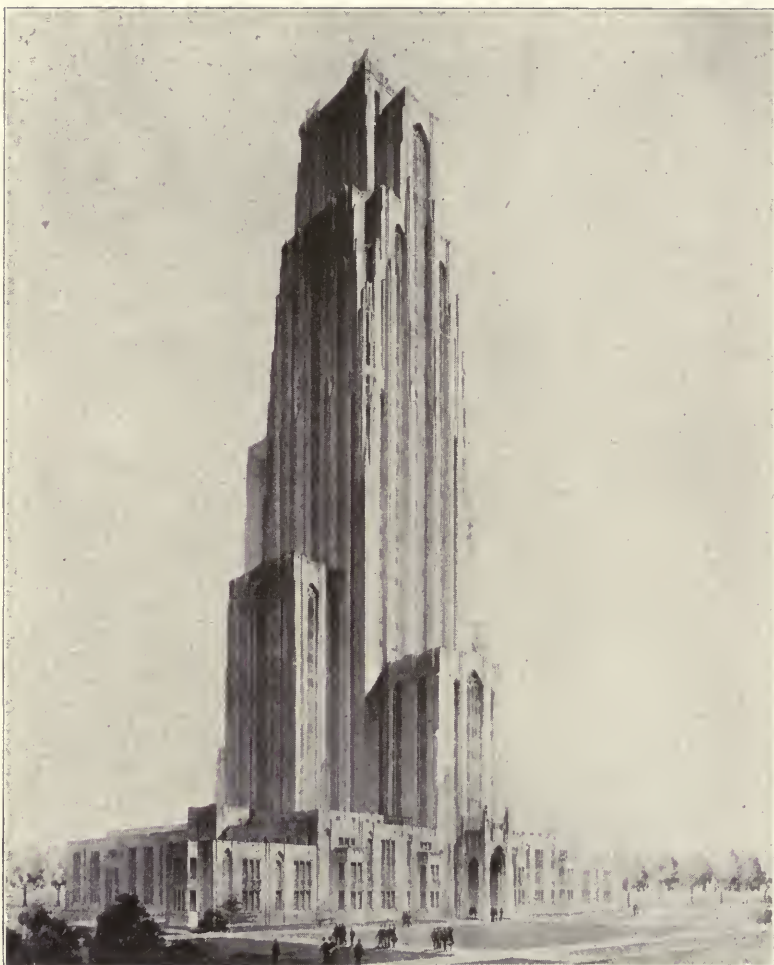
(b) Artificial or man-made barriers.

- (1) Improperly platted streets.
- (2) Roadways poorly maintained or for long periods under construction.
- (3) Grade crossings of railroad.
- (4) Canals.
- (5) Public buildings in commercial districts.
- (6) Legal obstacles such as deed restrictions, litigation, tying up property from disposition or use.
- (7) Attitude of "won't sell or improve" individuals.
- (8) Irregular street intersections.
- (9) Large manufacturing establishments, in some instances.
- (10) Ill-conceived zoning and building code regulations.
- (11) Cemeteries and public parks.

Only a few of the more important influences which affect the expansion of cities have been noted. Department stores which pioneer in new districts, street opening activities, rail terminal building construction, connecting of important business districts by means of new bridges, the extension of street car lines to new terminals, and many other conditions prompt and inspire growth of one kind or another. The ability to foresee the causes and results of expansion has made men vast fortunes in many American cities, men who at the same time have performed invaluable services for their respective communities.

Review

- 1—Where does expansion first occur?
- 2—What sections of a city are given over to residential development?
- 3—Why are water courses barriers to business?
- 4—How do steep hills affect expansion of residential districts?
- 5—Why is a railroad considered to be an artificial barrier?
- 6—Where does growth occur in relation to railroads?
- 7—Why is a cemetery a barrier to orderly growth?
- 8—What difficulties are encountered in relocating cemeteries?
- 9—When does a manufacturing plant become a barrier to growth?
- 10—Is it easier to assemble large tracts of land where there are few or many owners? Why?
- 11—Name a legal obstacle that sometimes hinders the growth of a city.
- 12—Explain how a “won’t sell” type of owner throttles growth.
- 13—Why is a zoning law a barrier to expansion?
- 14—How do deed restrictions sometimes prevent the use of land for business purposes?
- 15—Do public buildings, hospitals, asylums, prisons, etc., act as barriers? Why?
- 16—What character of streets sometimes prevent growth?
- 17—What takes place when a large, important industrial enterprise locates on the border or just beyond the limits of a city?
- 18—Why has transportation proven a potent factor in the expansion of cities?
- 19—How have subdividers helped in the growth of cities?
- 20—Name several other influences which affect and determine expansion of cities.



A NEW NOTE IN UNIVERSITY ARCHITECTURE

The University of Pittsburgh proposes to erect a new \$9,000,000 skyscraper about thirty stories in height to accommodate its activities. This is distinctly an innovation and a radical departure from the use of the classical type so long in vogue for institutions of learning. Above is a conception of the general plan of the proposed structure.

CHAPTER 7.

UTILIZATION OF URBAN LAND

Five general uses, including land devoted to residential, business, storage, industrial and public purposes—An elaboration of each character of use—Dwellings and the numbers they accommodate—A study of land utilization in Cleveland—Character of a city reflected by the use it makes of its land.

There are five broad purposes to which land is devoted in the ordinary city:

- 1—Residential use.
- 2—Business use.
- 3—Storage.
- 4—Industrial use.
- 5—For public use.

More land is actually used for the accommodation of dwellings than for any other single purpose. This covers housing facilities of all kinds, including single family homes and multiple dwellings, such as two-family houses and apartments, large and small. When a subdivider acquires a tract of land and cuts it into lots of a size of forty feet front by one hundred and twenty feet deep, and makes proper allowance for roadways, he produces about six home sites to every acre. Lots vary in size according to neighborhoods, and in the high grade residential sections of large cities lots may average nearly an acre in size.

The amount of land required per person for residential use is greater than for business or industry. Five hundred persons may be employed in a great department store which occupies a relatively small site compared to the scores of tracts of land these same five hundred persons occupy for residential purposes. A twenty-story office building, housing 10,000 occupants, may cover only two or three acres of land, yet here is a small city in itself when the residential needs of the 10,000 are considered. A tire or automobile plant employs 20,000 people, yet these employees occupy many acres of home sites. Differences in ratios change with the character of each city, dependent upon whether people generally live in detached residences or dwell in apartment houses. The transition in the use of an urban site is definitely indicated when an old house, which has accommodated

one family, is torn down and an apartment building accommodating from twenty to fifty families takes its place.

In 1926 a survey was made of leading American cities, and a record made of the number of dwellings existing therein. ⁽¹⁾ Each apartment building, even though it accommodated many families, was listed as one dwelling. The two right hand columns below, added to the survey's original figures, show the 1927 populations, according to official estimates, from which the number of persons per dwelling has been calculated. Manifestly there are many apartment houses in all of these cities, or the number per unit would not be so high. The survey showed the following totals:

Name of City	Dwellings in 1926	Population Total, 1927	Number per Unit
Greater New York.....	398,899	8,322,554	15
Philadelphia	383,708	2,051,751	5
Chicago	338,790	3,151,989	9
Detroit	167,994	1,430,896	8
Los Angeles	136,254	1,242,700	9
Cleveland	127,034	996,051	7
St. Louis	128,731	834,729	6
Baltimore	148,293	825,554	5
Pittsburgh	102,340	686,400	6
San Francisco	98,243	708,774	7
Boston	86,760	860,269	9
New Orleans	83,896	429,813	5
Buffalo	80,537	591,236	7
Washington, D. C.....	78,670	536,025	6
Indianapolis, Ind.	78,096	392,743	5
Cincinnati, Ohio	68,544	429,334	6
Portland, Ore.	59,583	348,688	5
Milwaukee	72,937	525,719	7
Minneapolis	72,559	449,087	6
Kansas City, Mo.....	66,839	437,953	6
Denver	55,193	328,308	5
St. Paul	46,293	304,973	6
Newark	45,273	472,537	10
Jersey City	33,948	335,366	9
Salt Lake City.....	25,816	133,000	5

John A. Zangerle, ⁽²⁾ county auditor and chief assessor of Cuyahoga County, of which Cleveland is the county seat, made a careful study and survey of the uses to which land is put in the City of Cleveland, a typically industrial city, containing seventy-two square

⁽¹⁾ Survey by The Longacre Engineering and Construction Co. as reported in *The Buffalo Realitor*.

⁽²⁾ John A. Zangerle, author of "*Principles of Real Estate Appraising*," published by the Stanley McMichael Publishing Organization, Cleveland.

miles of territory and with a population of about 1,000,000 persons. After considerable study from a vast amount of data available through his office, Mr. Zangerle reported the per cent of total land area devoted to various classes of use to be as follows:

Residences	49%
Business	3%
Industrial purposes	19%
Public uses, including parks, public buildings and all land devoted to public purposes.....	7%
Streets	20%
Vacant land	2%
<hr/>	
Total	100%

Mr. Zangerle further estimated that a little over one-half of building contracts are for residential buildings. The value of all buildings, however, showed residences as only about one-third of the total contracts ordinarily awarded. It must be understood, of course, that the proportions may differ in different kinds of cities, but the above estimate is interesting, and comes from an authoritative source.

Growth of many cities, especially those having diagonal streets extending out from a central downtown point, is star shaped. This is due to the fact that residential development first takes place along and near main arteries, because transportation and business facilities are usually available there. Between main arteries the growth is much slower,

In most instances, the growth of a city is more or less uniform as to distance in all available directions from the center of the community, unless topographical or water faults form barriers. If one general direction is favored by well-to-do residents, the lots will be much larger, thus taking up more land for a considerable distance out. While cheaper home sites are smaller, there are many more people to occupy them, so the distances to the borders of the built-up section of a city will often be found to be relatively the same in one direction as in another, providing artificial or natural barriers do not prohibit easy expansion.

Subdividing of land always precedes demand. Enterprising real estate men keep acquiring acreage just at the edge of current development, and year after year open new allotments, although actual building operations on these may not occur on an extensive scale until several years later. As the demand for dwellings manifests it-

self, however, new houses arise and growth presses on outward. Subdividing has come to be a highly specialized business, and few owners of vacant land who are not allotment operators find it either possible or profitable to attempt to sell their acreage in the form of individual home sites. Land first passes from the man who actually farms it into the hands of investors who create estates upon it, or carry it between the time it cannot be profitably farmed, because of its value and the taxes imposed upon it, and the time it actually passes into the hands of the subdivider for improvement and distribution to ultimate home owners.

BUSINESS PROPERTY

Land devoted to retail business uses in a city always enjoys a ready demand, and commands the highest price. Values reach their peak in the downtown locality, sometimes referred to as the "one hundred per cent" section, where department and large specialty stores have their headquarters. This locality is always on the city's main business street, which usually extends out to the high grade residential district.

As population grows, new business enterprises seek locations, competing in the payment of rentals for choice sites. This higher scale of rents which is established, and which is nearly always moving on an upward curve, creates new land values, which in the larger cities of the country mount into many thousands of dollars per foot front. This naturally creates keen competition among merchants, investors and speculators to gain possession of such land.

Business properties in the central districts of cities, however, are owned by comparatively few people. Some of these owners secured their holdings by inheritance. The sites were either business locations occupied by their fathers, who bought them for relatively low prices when the city was a small town, or were the homes of their families a generation or two ago. Others were purchased by investors with an idea that the town would grow larger and land values increase. Still other locations were bought ten or twenty years earlier at what were then considered enormously high figures, but which are now dwarfed by prices offered for similar sites.

Due to the fact that in former years retail stores were small in size, many of the lots devoted to business in the centers of older cities are comparatively small. Widths of twenty-five and thirty feet front are quite common. When large business enterprises found it

necessary to acquire more land for the erection of department stores, banks or office buildings, it was necessary to merge several tracts of land often at high prices. This has been done by buying outright, leasing for long terms of years, or the purchase of existing long term leases.

To permit the use of land in the rear of business frontages in downtown areas, but located between main thoroughfares, arcades have been built in some cities, extending through from one thoroughfare to another, affording low priced frontages where stores may be located which cater to pedestrian trade. Arcades to be a financial success must extend between two heavily traveled thoroughfares. When so located, they often prove exceedingly profitable investments. Land which would otherwise be used for rear yard or storage space is given a rental value comparing not unfavorably to that fronting on a high valued retail business thoroughfare. Arcades, in addition to serving the purposes of intensive utilization of otherwise almost valueless land, also filter pedestrian traffic through from street to street, thus relieving heavily congested arteries.

In recent years, due to the decentralization process which has been hastened by the use of automobiles, neighborhood business districts have grown up in outlying parts of many cities. Values sometimes attain \$5,000, \$6,000, and \$8,000 per foot front. Stores, banks, markets, theaters and office buildings are erected, and a miniature business city arises, with its school, library, fire station, telephone exchange, and practically every other facility that a downtown section enjoys. Such business sections spring up at strategic points where main arteries cross, at street car or bus terminals, and sometimes for no other reason than to supply a large residential district with business facilities. Land at the corner of Hollywood Boulevard and Vine Street in Hollywood is valued at \$6,000 per foot front. A corner of Euclid Avenue and E. 105th Street, Cleveland, was appraised at \$7,000 per foot front in 1924. About the same time a large department store at Sixty-Third and Halsted Streets, Chicago, valued its site at \$8,000 per foot front.

STORAGE SITES

Much land in cities is devoted to the primary purpose of storing goods. Warehouses are of this character, accommodating businesses which receive and ship commodities in commercial transit from producers to consumers. Great storage houses are being built every year in cities. Business practices have changed in recent times, so

that most retail merchants do not now carry large stocks of merchandise in their retail stores, but rent cheaper space in warehouses for goods which are transferred to their stores as needed. This has permitted many retail establishments to continue operations without enlarging their quarters on high priced land, but devoting every available square foot of space to selling purposes.

Storage warehouses for furniture have multiplied in many cities in recent years. As communities have grown, many find it desirable to abandon living quarters in dwellings or apartments, storing their furniture, and moving to furnished flats. Concerns engaged in the business of operating such warehouses have learned, in the past few years, that instead of having great central warehouses in which to do business, it is more advisable for each concern to have a chain of smaller units, located in different parts of a city, easily accessible to residential districts.

Storage warehouses for food are to be found in most cities. Here another definite change in living conditions is evidenced. A generation ago almost every family stored vegetables and fruit in the basement, laying in a supply in the late summer or early fall. This general practice no longer prevails. Neighborhood markets now sell foodstuffs as they are used. Fruit and vegetables are received almost daily from the great producing centers of California, Florida, and other states. Housewives no longer make a practice of sealing fruit down in glass jars, but buy it in cans at less cost, and often of superior quality, from a chain grocery store, one of which is now to be found in almost every neighborhood. Each chain store, incidentally, maintains its own supply headquarters. Storage warehouses have made this possible, and much land is now being devoted to this use.

Garages, whose principal business is storing automobiles, are increasing in numbers in every large American community. With cities facing street congestion, due to the parking of automobiles, the increased use of such facilities seems definitely assured. Earlier mistakes due to the placing of such enterprises on too high priced land are being overcome as promoters discover less expensive, close-in land on which to erect such structures. They must be located in proximity to large office buildings and commercial establishments, but operated on a basis where the cost will allow the paying of current overhead expenses, and make a reasonable profit for both building owner and operator.

A new use for urban land which made its appearance with the influx of passenger automobiles in downtown business districts is the automobile "parking yard." Hundreds of old buildings are being torn down in American cities annually, and their sites used for parking machines. It is estimated by men who engage in this business that approximately 200 square feet of land is needed for storing each car, and that they can pay as a rental for such land an average of from fifteen to twenty-five cents per car per business day, according to the fee they receive from their patrons, and the location of the space. One operator in the City of Cleveland in 1927 was credited with paying \$75,000 per year in rental for vacant lots used solely for storing automobiles. Another operator paid \$45,000. Buildings on valuable land not quite ready for business development, but which have lost their revenue producing power, are now swept away by wreckers, and the land temporarily used for this new type of business.

Large amounts of land are being used for storage purposes where transshipment of goods is constantly taking place. Huge warehousing enterprises are being built in all large American cities, providing for the handling of many carloads of foodstuffs and merchandise direct from cars to trucks, which distribute goods over large areas. Many wholesale market districts were started in downtown areas a generation or two ago because horse-drawn vehicles were used exclusively. The land has since become valuable, buildings in use have become antiquated, and the motor truck has done away with the necessity of downtown locations. Consequently, these downtown markets are disappearing from many cities. Wacker Drive, the double deck street in Chicago, is on the site of Chicago's old downtown produce market, which has moved to modern quarters farther distant from the retail commercial district.

Large railroad yards, occupying many acres of valuable land suitable for factory purposes, are being used for the storage of freight cars. During certain months when coal shipments are at low ebb, hundreds of open steel gondola coal cars may be seen packed into these great storage yards. Large numbers of freight cars are being stored constantly in railroad yards in cities.

Lumber yards sometimes occupy large areas of urban land, and are maintained primarily for storage purposes. Certainly no one goes to a lumber yard to see what the dealer has on display. The lumber merchant must maintain his yard, and store his product there from

the time it is received until it is sold, sometimes months later. Building material and coal yards are in the same class.

Great steel tanks for the storage of artificial gas, oil, and gasoline in cities occupy land devoted solely to storage use. Street car barns are simply storage houses for the cars they shelter. Contractors of various types are forced to maintain storage yards in cities for the equipment they employ on their work. Great open spaces are often seen adjoining docks on waterfronts, where large quantities of sand, gravel, stone and crushed slag are stored.

Scarcely a large manufacturing enterprise exists that does not use considerable ground for storage purposes. This is especially true of steel mills where space may be found for huge piles of ore, limestone and slag. Consequently a large amount of land in a city is constantly being used for storage purposes.

INDUSTRIAL USE

Land used for industrial purposes varies in amount with the character of a city. Washington, D. C., Santa Barbara, Calif., and Ann Arbor, Mich., have very little ground utilized in this way, while cities such as Detroit, Pittsburgh and Cleveland have thousands of acres devoted to such use.

Some types of industry need large areas of land in connection with their operation. Iron and steel mills usually occupy great sites which were acquired at low prices. They utilize a great deal of land to co-ordinate their processes. Other types of industries are conducted indoors. Witness a great envelope factory, where millions of pieces are turned out daily. Enough land to accommodate a few trucks is all that is required beyond that actually occupied by the plant itself.

Many sites are used in industrial cities for light manufacturing purposes. Here are great buildings, heated, and supplied with power facilities, where space can be rented by the square foot in any amount desired. Factories requiring one room, or several acres of space, can find their needs supplied in such structures. Through these pass constantly growing industries, from the initial promotion stage until they outgrow their quarters and move to their own plants.

Certain types of factories demand plant locations with railroad facilities. They engage in handling heavy products which are received in the form of raw materials, and are later shipped out in a finished state. Other classes of manufacturers do not need railroad sidings, for automobile trucks furnish them with the necessary trans-

port service formerly performed almost entirely by railroads. This has greatly broadened the amount and character of land which can be used for industrial purposes, and has resulted in manufacturing districts being built up more uniformly than formerly.

Land, such as gullies, swamps and creek beds, unattractive for other purposes, can be used for industrial enterprises, especially by concerns which have quantities of waste to dispose of. A plant will be erected on an acre or two of level land fronting on a street or road, and gradually the rough, uneven site will be leveled off, and made useful through the process of filling in low land in the background. Many irregular sections of a city may be entirely transformed by this method, and productive land created that otherwise would be practically useless.

Industrial areas must have adequate street improvements in close proximity, and, usually, must be near neighborhoods suitable for residential development, in order to supply land for the convenient housing of employees. Plants located on isolated tracts of land beyond the borders of cities have often failed because of inability to secure workmen at competitive wages. Employees like to live within a reasonable distance of plants where they labor, and they demand facilities in the way of convenient transportation to markets, schools, churches, and places of amusement, without too great an expenditure of time, effort and money.

It is interesting to know that there is an evolution going on in regard to the use of land for industrial purposes. Probably just as much land is being used as formerly, but in larger units, as the number of individual manufacturing enterprises throughout the country seems to be decreasing. According to figures compiled in 1927 by the Department of Commerce at Washington, there were in 1919 a total of 213,631 manufacturing industries in the United States. In 1925, the total was given as 187,386, a decrease of slightly more than twelve per cent in six years. Despite the lowering in number in individual industries, the value of products produced increased from \$32,146,000,000 in 1919 to \$41,500,000,000 in 1925. Use of machinery and employment of better production methods is responsible for this distinct evolution that is going on in manufacturing businesses.

Almost any kind of land may be utilized for manufacturing purposes, providing it can be readily reached through ordinary forms of transportation. It may cost as low as one-fourth of a cent per square

foot, or as high as \$6 to \$8 per square foot, as it does in some favored sections in large cities.

PUBLIC USE

The last broad classification of the use of land in cities covers that employed for public and semi-public use. This embraces:

1—Public streets from a fifth to a fourth of a city's entire area.

2—Public service buildings, such as city halls, court houses, fire stations, pumping stations and reservoirs, police stations, libraries, record halls, public markets, auditoriums and armories.

3—Schools, public, parochial and private, including academies, colleges and universities.

4—Railroads, including rights of way, stations, and freight terminals.

5—Street car terminals.

6—Public utilities, such as electric lighting, gas and telephone companies, which maintain sub-stations in every part of a large city. Ice companies, while essentially private in character, frequently maintain many public distributing stations.

7—Parks. Hundreds and sometimes thousands of acres are devoted to recreational purposes in many cities in the form of parks and boulevards. Due to the care lavished upon them to keep them in presentable condition, park lands attain considerable value, particularly as they usually attract a high class of neighborhood development.

8—Golf courses, both public and private, exist by the hundreds in American cities. These are improved and operated at great cost, and often have palatial clubhouses built upon them.

9—Cemeteries are essential in every city, and areas of land which often become extremely valuable are devoted to such use.

10—Prisons, workhouses and reform institutions.

11—Hospitals and asylums, maintained at public or private expense, are found in every American city, often with spacious grounds surrounding them.

12—Church lands. Some of the most valuable sites in American cities today are occupied by religious edifices, devoted to a single public purpose.

13—Institutions operated for public use and benefit, such as Y. W. C. A.'s, Y. M. C. A.'s, Salvation Army headquarters and branches, lodge headquarters and meeting halls, dance halls, skating rinks, and similar types.

14—Playgrounds, bathhouses and swimming pools in congested sections of great cities. Allied to these are settlement houses in similar districts.

In all cities there are areas of unimproved or unutilized land, including vacant lots upon main streets, tracts of land within the municipal boundaries devoted to no economic use, and lands under water or topographically unfit for any purpose. Of course, the proportionate amount will vary from city to city.

It is interesting to note that as a city grows in population, the need for additional land for public use becomes greater. The small town or city does not need parks or locations for public or semi-public institutions of as great an area as required in congested cities. Proximity to open agricultural areas affords a substitute. The planner of a modern city now seeks to foresee these needs, particularly for school and church sites and parks and playgrounds. Sites are sometimes acquired for parks, schools, hospitals, cemeteries, and similar purposes long before they are actually established.

The utilization of urban land reflects, in part at least, the type of a city and the occupations of its residents. The general characteristics and culture of residents of Washington are unlike those of a city engaged largely in manufacturing. The small "mill" town in turn is distinctly different from an agricultural center.

Review

- 1—What uses require the largest amount of land in a city?
- 2—Why do many cities grow in a star shaped manner?
- 3—Does subdividing of land lead or follow demand?
- 4—Trace the utilization of land from a farm to a finished subdivision.
- 5—What class of land attains the greatest value in cities? Why?
- 6—Why were lots in older business districts usually small in size?
- 7—State a principle in connection with the utilization of land for building arcade structures.
- 8—Why do neighborhood business centers develop? Name several important ones.
- 9—Name types of businesses using land for storage purposes.
- 10—Where should automobile storage garages be placed?
- 11—Explain what is happening in downtown areas of cities for taking care of the automobile parking problem.

12—To what class of storage warehouses has the “chain” principle been recently applied?

13—What change in household economy has been brought about by the operation of warehouses storing food?

14—What do lumber and coal dealers use their plants for? Why?

15—What differentiates the City of Washington from Pittsburgh or Detroit?

16—How has the motor truck broadened the use of land for industrial purposes?

17—Name types of land which can be reclaimed for industrial use. How?

18—Give at least ten uses of land for public purposes.

19—Do cities foresee their needs for public lands for use in future years? Why?

20—How does the use of land in a city reflect the character and occupations of its occupants?

CHAPTER 8.

TOPOGRAPHY AS A FACTOR IN LAND UTILIZATION

How it controls directional growth—Four types of cities—Examples of each—Waterfaults act as barriers—Hilly streets a deterrent to trade—Topography limits the size of a city—Soil and climatic conditions—River cities subject to flood—Few cities topographically perfect.

Topography, probably, controls to a greater degree than any other factor, the directional growth of a city. It likewise determines in definite ways the utilization of land which is to be used as a city site.

There are, broadly speaking, four types of cities classified according to topography alone:

1—The flat city, built upon a level plain or plateau.

2—The rolling type, with slight undulations in grade.

3—Hill cities, where steep grades are encountered.

4—Valley cities, flat in part, but with mountains or hills about them.

Some cities may have topographical conditions which partake of almost all of the characteristics noted. Topographical features, which are actually handicaps in some respects, may be offset by greater advantages offered in other phases of a city's physical layout. For instance, a settlement may build upon several hillsides, yet this fault may be offset by the presence of a splendid harbor.

Houston, Tex., and Lincoln, Neb., are examples of types of cities located upon flat land. They are nearly level in character, though an occasional rise may be noted here and there. Chicago may be considered as a flat type of city, there being an almost total absence of hills in either the downtown or residential districts. New Orleans is a flat city, as is also Detroit.

Probably a larger proportion of American cities would be included in the rolling type. Minneapolis, St. Louis, Columbus, Buffalo, Washington, Toronto, Vancouver, Atlanta and Boston are in this classification. While it is more expensive to install public service facilities, such as water, gas and sewer mains in a city built on rolling land, the amounts and varieties of property afforded for residential purposes are so much greater and the scenic effects are so superior, that they offset extra construction costs.

There are a number of notable examples of the hilly type of city in this country. San Francisco, while having much of its principal business district situated on flat land, is an extremely hilly city, some streets being so steep that automobiles find difficulty in ascending them. Street cars require cables instead of trolleys to haul them to street summits in some districts. Seattle is another hilly city on the Pacific coast. Quebec is probably the hilliest city in Canada. While Los Angeles is comparatively flat in many sections, the city in recent years has sprawled out, up and over the Hollywood hills of the Santa Monica range, until extremely steep residential streets ascending many hills are encountered.

Valley cities are quite common, a number existing in this country and many abroad. Pittsburgh has been built, for the most part, in a valley, though spreading out over the surrounding hills for its residential areas. Rio De Janeiro in South America lies along its splendid harbor but is hemmed in by high mountains. Poughkeepsie, N. Y., rests in the valley of the Hudson River, stretched out along the riverbank, but is backed with hills beyond. Montreal is situated along the banks of the St. Lawrence River with Mount Royal rising massively in its rear. Hamilton, Ont., is situated in a beautiful level valley along Burlington Bay, with an abrupt rise of several hundred feet to a great plateau to the south. Cincinnati's business district is in the valley along the Ohio River, with its principal residential districts on the hills overlooking the great watercourse. Salt Lake City is in a great valley surrounded by majestic mountains.

Pasadena, California, a suburb of Los Angeles, is another valley city. Due to the fact that it is tucked in back of the hills and away from the cooling breezes of the Pacific Ocean, the daily temperatures are said to average ten degrees higher in Pasadena than in Los Angeles, twelve miles away. In winter the climate is more salubrious but during the summer the valley in which Pasadena is located is correspondingly hotter.

It is easy to realize that the character of the landscape of any city has definite tendencies in influencing growth and development in one direction or another. Even in flat cities this is so, for high grade residential areas develop on one side of a railroad beyond a retail business district, while a much lower grade of homes springs up back of warehouse and factory sections on the other.

Waterfaults present many obstructions to the growth of cities in normal directions and have direct influences on city expansion.

If a community is located on the banks of a river or lake, growth is always away from its point of origin. The original settlement in almost every instance began near the waterfront. Growth then started out a street running at right angles to the water way, the shore coming into use for commercial, industrial or shipping purposes. Seaports have developed for ages in relatively the same manner. Waterfronts have usually been retained for wharves and warehouses, industrial activities gradually being pressed back into low areas where swamps or flats formerly existed. The most favorably located level areas have been devoted to business uses, while the higher lands beyond have been used for homes.

Occasionally a city will "straddle" a small river or stream, as has occurred in Dayton, O., San Antonio, Tex., and Fort Wayne, Ind. A small stream does not present the barrier that a big river does although Covington, Ky., has grown up opposite Cincinnati, O., and Kansas City, Kan., has practically become a suburb of Kansas City, Mo. Though a river and an international boundary exist between Detroit, Mich., and Windsor, Ont., their residents intermingle constantly and trade freely with each other, though operating under distinctly separate governments, both locally and nationally. The same may be said of Port Huron, Mich., and Sarnia, Ont., as well as Niagara Falls, N. Y., and Niagara Falls, Ont.

Rivers, creeks and lakes are harmful to the development of a business street. Occasionally, in America, roadways have been laid out upon both sides of a canal, and business has located upon the street thus formed. This is unusual and wherever possible an abandoned canal has either been bridged over its full length and width or filled in and made a part of the street. In early times Broad Street, in the city of New York, and Canal Street in New Orleans bordered canals which have since been abandoned, filled and used for street purposes.

Where a street crosses a river, the river is usually a bar to the further extension of a business district. Land within several hundred feet of a river is adversely affected by proximity to it and invariably has less value to merchants as locations for stores. Rivers and bodies of water may possess scenic advantages for residential districts and often add value to bordering land, but the reverse is true in business districts. Minneapolis has its most charming residential district surrounding a beautiful chain of lakes. De-

troit's exclusive Grosse Point overlooks the Detroit River and Lake St. Clair.

Spanning waterfaults, which seemed insuperable fifty years ago, is now a comparatively easy matter as may be witnessed by the erection of splendid bridges in many parts of the world and particularly in America. New York has a number of such links across the East River, while plans have been formulated for a great bridge across the Hudson River to New Jersey. Philadelphia, Penn., and Camden, N. J., have been joined with a great span across the Delaware River, and San Francisco, Calif., expects to erect a long bridge across the bay connecting it with Oakland, doing away with the necessity for tedious ferry rides. Detroit and Windsor expect soon to be linked with a great bridge across the Detroit river which will doubtless result in Windsor's upbuilding to an appreciable degree. Even New Orleans is looking to expansion along the east bank of the Mississippi, using buildings containing ramps at each end of a huge span, to obviate the necessity for long expensive bridge structures at each end to ascend to the necessary level for the crossing. Modern engineering genius is constantly sweeping aside what a few years ago appeared to be insurmountable barriers.

The control which a stream exercises to limit and restrain the growth of a city to the side upon which is located the point of origin depends on width and depth of the stream, the comparative area, topography, and natural advantages on the two sides of the river, and speculative enterprise.

Level lands, located near watercourses and possessing satisfactory railroad facilities lend themselves naturally to development for manufacturing purposes. Near Pittsburgh large areas bordering rivers are built up with great steel plants. The "flats" in Cleveland and a considerable portion of the east side of Los Angeles are given over to manufacturing enterprises because the land is level and comparatively cheap in price, or at least was so before most of it was occupied by hundreds of factories.

Retail business demands locations where level street traffic may be enjoyed. Hills are barriers to business expansion. In Seattle the chief retail business streets run along terraces which parallel the ocean. Streets leading up from one terrace to another are, in some instances, quite steep, and consequently these get a much lower class of business development than do the level thor-

oughfares. About the only street in San Francisco where retail business ascends a hill is Grant Street, but Chinatown lies beyond and proves a magnet in attracting pedestrian traffic despite the climb involved. Other close in hilly streets are given over, for the most part, to hotels and apartment houses. Where small stores and shops have been built facing streets with steep grades, owners find it difficult to keep them regularly rented.



HILLSIDE APARTMENTS WITH GARAGES BELOW IN
SAN FRANCISCO

The city by the Golden Gate sprawls out over a hilly area, every foot of which must be used. Here is an apartment at Polk and Greenwich Streets, San Francisco, which is built on a hillside. Note the garages at street level provided for the tenants' cars.

The slightest grade on a city street reduces the value of the artery as a shopping center. This is due to a number of reasons:

1. Pedestrians dislike climbing a hill or slope.
2. It is difficult to make store fronts conform to sloping sidewalks,

3. Displays of merchandise are less effective when placed in windows where the level of vision changes as the pedestrian passes.

4. Sidewalks in winter or during rainy seasons when slippery are more dangerous to pedestrians and are avoided.

5. Pedestrians climbing grades, especially if steep, are intent on added difficulties in walking and are less inclined to observe window displays.

Chain store operators rarely locate a store on a corner where one street has a material slope in the sidewalk. Some have estimated that the detrimental effect to land value of a slope, from three to five percent in degree, along the front of a building, is from fifteen to twenty-five percent. A corner location is harmed even more where there is a sharp drop in the grade of the sidewalk along one side.

Steep hills such as occur in Duluth, Seattle and San Francisco restrict the growth of business to streets which parallel the contour of the hill. Business traffic, like water, always seeks a level.

Highways across valleys in cities, which have furnished new and modern means of communication by means of high level bridges, find the old streets lined with ramshackle buildings today which in former times were prosperous retail stores. An example of this may be found in the thoroughfare which parallels a long, high viaduct in Akron, Ohio, which extends from Main Street to the North Hill district. As soon as a new means of communication is established old highways extending down through a valley immediately lose their former importance.

Topography has a decided influence in the layout of the streets and highways of a city. As a community expands from the small town stage, thoroughfares are widened or extended out into new districts. In a city of the level type, square or rectangular street systems usually prevail, because there is nothing to prevent such a layout. Where hills and ravines intervene, winding streets and boulevards are often used, following the easiest grades and endeavoring to go as far as possible without having to utilize expensive bridges or tunnels. There are definite reasons for hilly cities having curved, crooked streets as there are quite apparent reasons for flat cities having straight unswerving thoroughfares, all being dependent upon the original topography encountered.

Topography may exert a definite influence upon the ultimate

size of a city. Suburbanization is steadily going on in every large city, yet there is a constant growth in the central business district, filled up as it is with a miscellaneous class of buildings and businesses. Pittsburgh has for years been facing the problem of expanding its downtown business area but has found it extremely difficult to do so because it is hemmed in by two rivers. The city some years ago cut away a great hill to provide comparatively level land to be utilized for business purposes. Seattle likewise washed away, by hydraulic process, a large hill which barred business progress. The city which may grow uninterruptedly in all or several directions finds itself in a more fortunate position than the one which must, at large expense, surmount natural barriers before it can expand. Inability to grow naturally results in a pyramiding of land values in business districts which in turn affect living costs to some extent.

A business street which dead-ends against a bluff or a water-course can scarcely hope to enjoy future growth in competition with the one which stretches away for miles through level territory. Due almost entirely to the element of favorable topography, the great mercantile streets of American and foreign cities are wide, long avenues where few natural barriers interfere with their free and constant extensions. This may readily be witnessed in New York City where avenues running north and south attract the best kind of business establishments while the streets running across the island east and west are, for the most part, comparatively unimportant. The notable exception is Forty Second Street. Fifth Avenue, Broadway and Sixth Avenue, the best business streets in New York, were laid out in early days in a way that has permitted their ready development and extension. Business has marched up these avenues steadily for many years.

Soil conditions frequently must be considered. Modern buildings on high priced land must have adequate foundations. The presence of hard, solid rock which must be blasted away at great expense, or of quicksand, through which concrete pilings must be driven down to bedrock, sometimes result in more favored locations being sought for imposing structures, thus robbing one street or section in favor of another.

Thin, barren soil is not conducive to the growth of fine large trees and attractive shrubbery, and high grade residential districts will seldom develop in such areas. Low, marshy land, while rich

in soil content, harbors unhealthy conditions and may be extremely damp, so it, too, is passed by when the developer is searching for the ideal home site.

Where a swamp or marsh is not too large or too deep, filling has often made utilization possible. In Lower New York, Beckman Swamp and Collect Pond have been obliterated by fills. The district from Montgomery Street east to the bay front in San Francisco was originally a mud flat. In Cleveland, a large area north of the railroad tracks of the New York Central, between W. 9th and E. 26th Streets, has been filled in and passenger steamship docks constructed on the water's edge. Chicago is reclaiming vast areas of park and boulevard lands from Lake Michigan. Much of the district from State Street eastward to the present lake shore was formerly submerged. Important parts of Syracuse, N. Y., and Hamilton, Ont., were formerly swamp lands. Much of Potomac Park in Washington is "made land" redeemed from the bed of the Potomac River.

Large, high plateaus above cities may sometimes seem to offer exceptional opportunities for residential areas, yet the cost of furnishing transportation facilities and of installing and maintaining public services is so expensive that the development of such land is often retarded. Despite this, however, Pittsburgh has some residential districts to which access is had by means of steep inclined railways which crawl up mountain sides carrying commuters each evening. Hamilton, Ont., is another city which is developing a large plateau above it in the same way, there being two inclined railways which afford the necessary transportation. Los Angeles also has its "Angel's Flight" which carries hillside residents up to their lofty apartment houses. In Hollywood, a high plateau jutting out from a mountain furnishes sites for a few unique homes which are reached by means of a six-story passenger elevator. Residents drive their automobiles into garages on the lower level and then rise by means of an elevator encased in a concrete tower to the level where their homes are located. This commands a wide and imposing view out over the City of Los Angeles.

In direct contrast may be noted cities located along the banks of the Mississippi River, lying actually below the high levels reached by the Father of Waters during the spring freshet season. Much of New Orleans lies fifteen feet below the dykes which protect it from the river. Drainage is afforded by pumping stations which

expel surface water and treated sewage into the river at all seasons of the year. New Orleans, too, has problems concerning foundations for large buildings as the city rests on a vast bed of silt. Yet it is an unusually large, important and attractive municipality and, next to New York, is credited with being the country's most important seaport. During the disastrous inundations of the spring of 1927, many towns, cities and villages along the Mississippi River fought unsuccessfully to keep out the raging waters, yet New Orleans escaped with comparatively little loss, great openings in the levees being cut several miles from the city to permit the water level to subside.

Cities lying along seashores, subject to visitations of tidal waves and hurricanes frequently invoke engineering genius to protect themselves from devastating elements. Galveston, Tex., has built a great concrete sea wall since the disaster it experienced in 1900. Residents of Miami, in 1926, after the disastrous hurricane, realized that a low, flat seaside city has little hope of successfully contending with such disasters when they occur.

Denver and Colorado Springs are foothill cities, though the business district of each is comparatively level. Denver, in addition to being an important railroad junction, was for many years the leading mining center of the Rocky Mountains. Here, in earlier days, prospecting parties were outfitted, while great wholesaling concerns furnished supplies for hundreds of mining camps. This business continues in somewhat different form today. The mining exchange in Denver for many years was the largest and most important in America. In more recent years Denver has excelled as a commercial city and has also gained prominence as a health resort. Colorado Springs is mainly a resort city, having unusual medicinal springs and being practically at the base of Pike's Peak. It also possesses an exceptionally dry climate, of value in the treatment of pulmonary diseases. Topographical conditions have exercised their usual control over the character and extent of development and growth in both these communities.

Few cities are located upon land which may be considered topographically perfect for all purposes. Indeed, it may be considered doubtful whether a perfect city site even exists. In any event, few present day cities of large size were thought possible when their founders established them. The pioneers had no knowledge of the requirements of a present day city and, perhaps, did

not even conceive the possibility of such cities existing. It is no wonder, therefore, that many communities now struggle under topographical handicaps that a planner of a present day city would not have endured. Engineering genius, however, is overcoming most of the handicaps and despite the topographical barriers with which most cities are confronted to some degree, their remarkable growth indicates the firm faith their citizens have in them.

Review

- 1—Classify types of cities according to topography.
- 2—Name two or more cities of each type.
- 3—What is a waterfault?
- 4—How does a city usually grow with respect to its point of origin?
- 5—Explain how a settlement on a river or lake initially expands.
- 6—What topography prevails in Pasadena? Washington? Houston? San Francisco?
- 7—Name a city that “straddles” a stream.
- 8—Why does retail business demand level streets?
- 9—Name the reasons why a shopper dislikes a grade in a street.
- 10—To what extent does topography control the street layout of a city?
- 11—Does topography affect the size of a city? Why?
- 12—Tell what happens when a business street dead-ends at a hill or a watercourse.
- 13—How do soil conditions affect city growth?
- 14—What precludes prompt development of high plateaus for residences near cities?
- 15—What city is fifteen feet below high water of the river passing it?
- 16—What did one city build as the result of a tidal wave and hurricane?
- 17—Name an important mountain side city and state why its mining exchange was important.
- 18—How have physical and topographical conditions exercised control over the City of Colorado Springs?
- 19—Is there a city perfect topographically? Why?



(C) Underwood & Underwood

THE WORLD'S MOST BEAUTIFUL BUSINESS HIGHWAY

The Champs Elysees is regarded by many as being the finest thoroughfare in Paris. With a beautiful boulevard in the center, lined with stately trees, there are other local channels of traffic fronting buildings at each side. While such a treatment does not improve it as a retail business street, nevertheless it is a most impressive thoroughfare which arouses the admiration of visitors from all over the world, and is typical of the artistic spirit of the great French metropolis.

CHAPTER 9.

STREETS AND HIGHWAYS

Streets the arteries of a city—Ancient and modern types—How streets developed—Need for planning—Widths of streets—Diagonal thoroughfares useful—Street plans—Two story streets—Arcading sidewalks—Regional highway plans—Restrictions on use—Superhighways—Inadequate streets limit a city's growth.

Streets are the arteries of a city, making accessible the lands lying within its borders. Without streets to make possible the use of property for business, commercial and residential purposes, cities could not exist.

Communities established in ancient times, at their very beginnings, provided open ways by which their inhabitants could travel from place to place. Their importance to the settlement was early recognized, and the right to their free use for the benefit of all zealously guarded.

With the development of modern civilization, and the establishment of private ownership of land, streets and highways became increasingly important. The farmer required roads over which to haul his crops to markets where he could exchange them for other necessities of life. The townsman needed streets to afford him access to the homes of his neighbors, and the shops and stores of tradesmen who furnished him with the requirements of his simple life.

Centering around crossroads, hamlets grew from a few scattered houses into villages having small stores fronting upon the main highways with houses clustered about to suit the whims of the builders. As the village developed, and population increased, secondary streets were laid out to provide locations for the homes of citizens who were either unable to acquire land upon the principal highways, or from choice preferred lots upon which to build aside from the currents of main travel.

Villages became towns, and towns grew into cities. More streets were necessary to accommodate the increasing population, and make possible travel from place to place. Streets were originally laid out to accommodate pedestrian and slow moving vehicular travel. Only a few owned horses and vehicles and their use

was limited to the absolute requirements of business. Some people, it is true, enjoyed a "coach and four," or a "one horse shay," maintaining their equipage solely for pleasure. Under such conditions, where streets and highways were never taxed to capacity, wide thoroughfares were unnecessary. Indian trails and cowpaths with a little widening functioned admirably as city streets, and were adequate to accommodate all of the traffic of earlier days.

From twenty to twenty-five per cent of an average city's total area is given over to streets. The advent of the automobile brought with it new and puzzling problems in regard to streets, their width and their layout in relation to the main business center,



FIVE STREET LEVELS TO GARAGE

This unique nine-story garage, located at Fifth St. and Grand Ave., Los Angeles, contains over six acres of storage space for automobiles, and has entrances from five different street levels, made possible by the fact that it is on a corner where both streets have abrupt ascensions. It offers an ideal use for such an unusual corner.

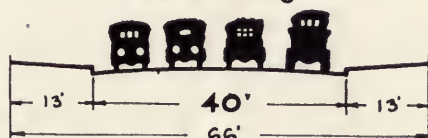
and other sections of a city. This new medium of speedy transportation has placed unlooked for burdens upon the streets of expanding communities, and much attention is now being given to their planning and development.

In addition to the services performed by a street as a highway of travel for pedestrians and vehicles going from place to place in a settlement, streets now serve other purposes which are useful and beneficial to all of the inhabitants of a community. In early

towns these open spaces between habitations were used for the dumping of refuse, and often the storage of personal belongings. A study of medieval towns presents a picture of squalor and filth in streets of settlements. These open ways were often ungraded, usually unpaved, muddy, full of obstructions and hazardous for all types of travel.

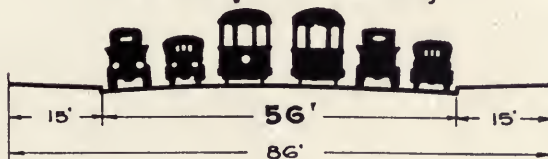
For 4 lines of traffic

All moving



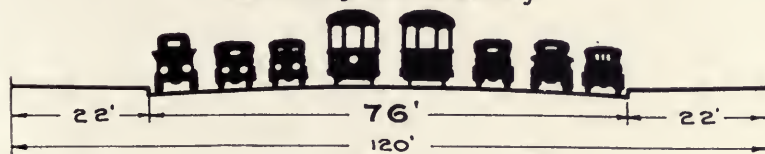
For 6 lines of traffic

4 moving & 2 standing



For 8 lines of traffic

6 moving & 2 standing



STREET CAPACITY AS REPRESENTED BY WIDTH

Traffic conditions in cities are necessitating the widening of many thoroughfares. Here may be seen the advantage of a wide street as against a narrow one, insofar as vehicular traffic is concerned.

As communities grew, and the importance of the highway became recognized, some attention was given by public authorities to the care and improvement of streets. Some of the earlier cities laid pavements upon principal thoroughfares, and some attempt at policing was made.

Beyond the function of the street as a channel of travel, it furnishes light and air for the buildings bordering it. In the old English law, this function gave rise to the ancient doctrine of light and air rights, which were zealously protected and guarded as a part of property.

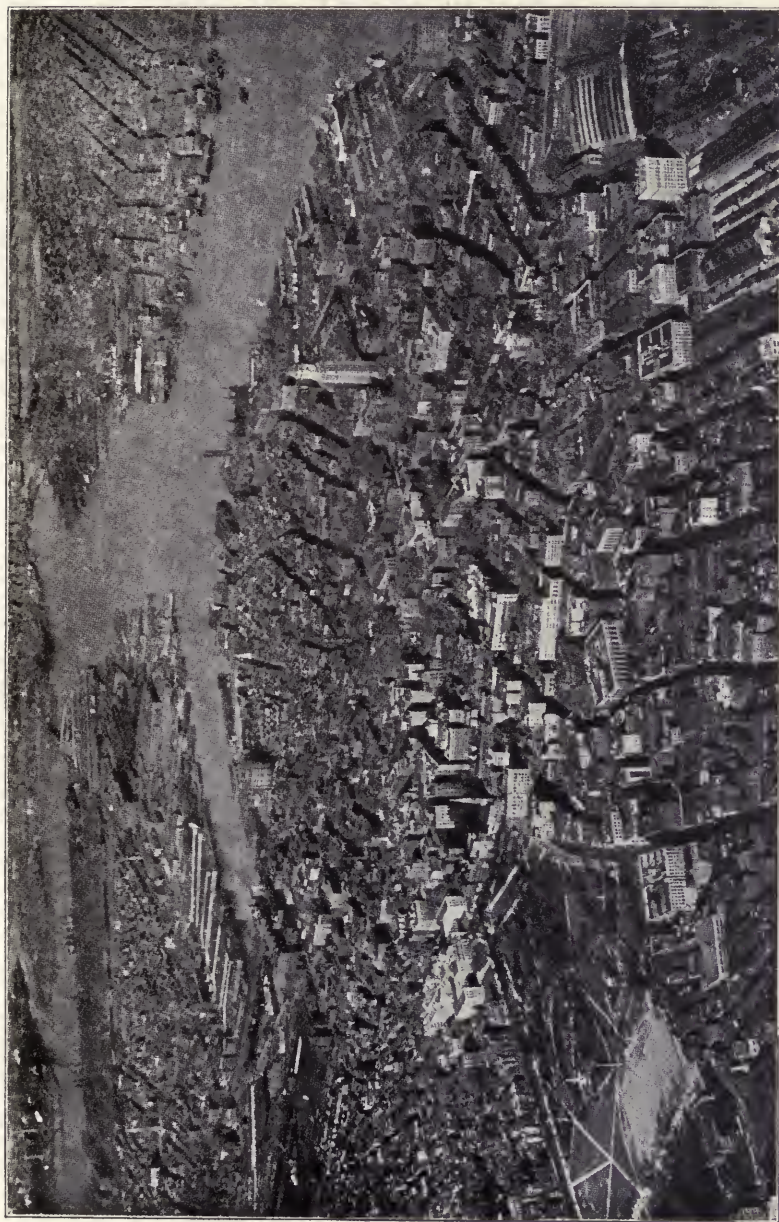
In modern times the street gained importance for services that it performed for the community by furnishing rights of way for the installation of various public utility services. Sewer systems, both sanitary and drainage, now occupy extensive spaces below the surface of city streets. Water mains, conduits for electric light and power lines, and pipes for conveying natural and artificial gas, are among the services to which the street sub-grade is now devoted. On the surface are often found street car tracks as a means of furnishing public transit. Overhead, in some communities, are found telephone and electric light lines, while all modern streets have poles from which electrical units furnish night illumination.

In addition to these functions, the modern street is necessary for the proper protection and safety of the property and persons of the inhabitants of the city. The thoroughfare provides means for policing the city, and facilitates the movement of fire apparatus, public services which are absolutely necessary in any large community.

Most cities developed haphazardly. Such a thing as a city plan was unheard of when most American cities of today were founded. Streets were opened only as the demand made itself apparent. Indian trails, cow-paths and natural avenues of travel were followed as the land about a struggling village or town was absorbed for business or residential purposes.

Need for wide, imposing roadways is seldom felt in a small community, consequently comparatively narrow streets are usually laid out, with the exception of the main thoroughfare, which is sometimes of adequate width. Little is done in the small town towards preparing for future growth. Subdivisions are opened from time to time as the demand is apparent. Sometimes new streets are linked up with existing ones, but more often each subdivider follows a plan all his own. Only by accident have street plans in most cities offered anything like an adequate solution of traffic problems now encountered.

Some American cities have been laid out with streets placed at regular intervals according to a definite plan. Most European



Photograph by U. S. Army Air Service

BOSTON'S STREET PLAN IS EXTREMELY IRREGULAR

A modern day city planner looks at this picture of staid old Boston and utters strange noises, for it is utterly devoid of any design on the part of man. At the left is the Boston Common. The customs house tower may be seen to the right, while at the upper left may be seen the shaft on Bunker's Hill. The gridiron at the lower right is the famous old South Station.

towns are without regular plan. Where cities have been platted rectangularly, they are so classified. Where diagonal avenues radiate from a common center or several centers, the axial type of platting is followed. New York is an excellent example of a city platted rectangularly. Philadelphia, New Orleans, and Washington, D. C., are rectangular in plan, with axial avenues radiating from centers.

Where definite plans have been adopted for the street layout, as in Washington, Gary, Ind., and Detroit, streets of even width, with parks placed at intervals, and areas planned for building development, are characteristic. Detroit was laid out according to what is known as the "Governors and Judges" plan, by which Grand Circus Park, an open space in the shape of a half circle, was selected as one center, and Campus Martius, where the Detroit City Hall now stands, was chosen as the other. From these two were projected grand avenues, radiating in different directions, and intersected by streets in concentric circles. Later rectangular districts with streets running at right angles were laid out in such a manner as to preserve uniformity of plan.

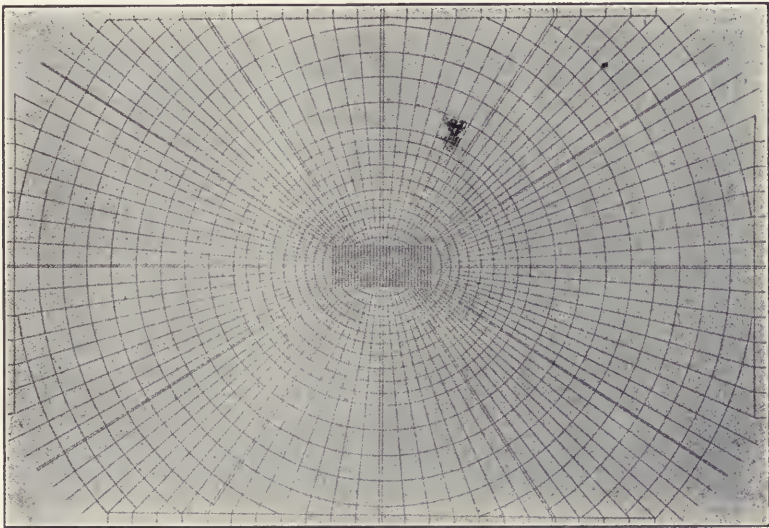
Old cities which have had a marked modern growth, such as New York, Boston, Athens, and Berlin, exhibit the combination of a center with crooked narrow streets, and contiguous and outlying sections rectangular in form. Rectangular platting, until recent years, has been accepted as the most desirable form of city plan. Many times it is varied with diagonal streets and circular boulevards, and with such variations is still the most acceptable plan for platting cities. Tracts or building lots of rectangular shape are most easily utilized without waste, and while not always contributing greatly to the beauty of a city, they save many dollars to land owners because of their adaptability for general building purposes.

Some older cities originally have had a small rectangular central plan. Growth has made necessary the additions of further areas, which have been rectangular in plan in most instances in conformity with the former layout. Cincinnati and Montreal are examples of this class. Birmingham, Tacoma, Topeka and Calgary, younger cities, have had extensive plans laid out, comprehending much space not needed at the time the city was designed, but which now are being developed according to the original schemes.

Waterfronts form bases for streets in towns fronting upon lakes, rivers and harbors, while turnpikes or highways serve the

same purpose for inland cities. From such bases the rectangular plats always develop. In many cities old trails and stage routes have been retained as principal streets.

Irregular platting tends to encourage concentration in central areas, whereas regular platting fosters axial growth; the latter is better for the future of any city inasmuch as it permits ready and quick access to central business districts from comparatively distant points, without weaving around crooked and irregular streets. Paris spent hundreds of millions of dollars on a boulevard system and



SUGGESTED STREET PLAN FOR A CITY

Disregarding topography and other existing conditions, this diagram is intended to illustrate the approximate number and general direction of the thoroughfares of a chief business and community center as proposed by one city planner.

a city plan, which to a great degree corrected many of the most serious street defects in the ancient city. Many American cities have in recent years undertaken at great expense similar changes, all of which would have been unnecessary had any comprehensive plan of city layout been adopted before substantial buildings had been erected.

New York presents an interesting city plan due to the work of an early platting commission. North and south avenues were placed 600 to 900 feet apart, resulting in fourteen avenues, while

streets were placed east and west at intervals of two hundred feet distant. The chief traffic of the island is now north and south. Despite its well conceived plan more and wider avenues are sorely needed to relieve congestion.

Historically, streets have interest which extends back into the far distant past. Perhaps the best known thoroughfare of ancient times was the Appia Via, the road to Rome over which the Caesars passed, and by which the Apostle Paul reached that famous city.



CALIFORNIA'S WIDEST BUSINESS THOROUGHFARE

Market Street in San Francisco is 120 feet wide, and provides accommodation for four street car tracks, in addition to automobile traffic.

The richest street, it is said, is Fifth Avenue, New York; the shortest is the Rue Ble, in Paris; the dirtiest is Tehanksti, in Nanking, China; the most aristocratic one is said to be Grosvenor Place, in London; the most beautiful is the Avenue des Champs Elysees, in Paris. The narrowest is Via Sol, Havana, Cuba, which has a width in places of no more than 42 inches.

Few cities foresee future greatness. When public buildings are planned, they are notoriously inadequate a few years later. So



(C) Underwood & Underwood

AMERICA'S GREATEST "ONE SIDED" BUSINESS STREET

Michigan Avenue, Chicago, where it fronts on Grant Park, is lined with monumental office buildings and hotels, but retail business is restricted to high grade shops, the larger stores going elsewhere, because a one-sided street does not attract throngs of shoppers.

with street systems which have been devised in the past, and which are in use today.

Experts in city planning, after years of study, both theoretical and practical, declare that there should be at least three classes of streets, namely: main thoroughfares, secondary highways and residential streets. Main thoroughfares should afford access to all parts of a city. Secondary highways should furnish access to minor business and industrial sections, and residential sections, and residential streets should be designed to give entry into those parts of a city devoted exclusively to homes.

Recognizing the growing importance of wide streets, legislation has been enacted in some states and cities regulating their minimum widths. In many cities streets of a width of less than fifty or sixty feet will not be accepted for dedication. In the province of Ontario, Canada, the legal width is not less than sixty-six feet.

It is now generally recognized by students of the subject that streets should have varying widths. Main thoroughfares, which extend out far beyond a city's limits, should be at least 100 feet wide. Secondary highways should be from sixty to eighty feet wide, while purely residential streets may be as narrow as thirty to forty feet, with reasonable set back regulations for dwellings.

Main thoroughfares on which street car tracks are located should, according to authority, never be less than eighty-six feet in width. This permits a clear fifty-six foot roadway; provides space for double car tracks in the center, a line of moving vehicles on each side of the car tracks, and a row of standing vehicles at each curb. A 100 foot roadway will allow two rows of moving traffic on each side of the car tracks, with a line of cars standing at the curb. Los Angeles is laying out a great many 100 foot roadways and widening existing ones to that or wider widths.

As long as trolley car systems exist, tracks must be provided. Cars on heavily traveled roads and downtown streets slow up other vehicular traffic to a great extent, because of the stops at almost every corner. Where trolley lines are to be installed, roadways of at least 100 feet in width should be provided. In New York City, where there are many narrow streets, tracks were formerly permitted on streets only thirty or thirty-five feet in width. The practice has been changed, so that now no car tracks may be laid on roadways of less than forty feet.

Where there must be car tracks on a city street, it is much better to have them in the center of a roadway than one at each side. In the latter instance, every vehicle entering the main thoroughfare from a side street must cross a car track with its attendant dangers. If the tracks are in the center of the roadway, traffic bearing to the right is not endangered.

Many cities throughout the country are spending vast sums, or are planning such expenditures, to provide thoroughfares for



SEATTLE BUILDING ARCADED TO WIDEN STREET

This large and substantial building on Fourth Avenue was arcaded in the manner shown when the street was widened from 66 feet to 84 feet in 1907. A material reduction in condemnation costs resulted.

automobile travel on which there shall be no street car lines. Main highways, extending out into the suburbs and open country beyond are being widened to 100 feet or more to provide against congestion of vehicular traffic.

The opening of diagonal streets from the center of a city to its circumference is urged as a means of giving ready access from the downtown sections to the residential areas. Some cities are fortunate in already possessing such thoroughfares. Chicago has Milwaukee, Lincoln, Ogden, Blue Island, Archer and other

avenues. Detroit has Jefferson, Gratiot, Woodward, Grand River and Fort Street. Cleveland has Superior, Euclid, Prospect, Woodland, Broadway, W. 25th St., Lorain, and Detroit Avenues. In each of these cities, as in many others, these main outgoing thoroughfares do much to relieve traffic congestion by conducting it quickly to the farthest points of a city.



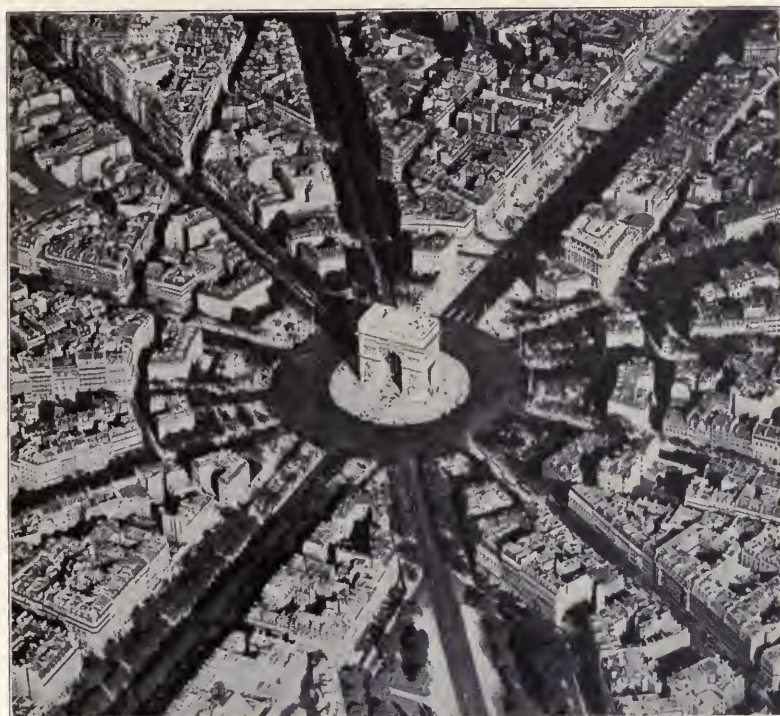
AN INGENIOUS TRAFFIC FILTERING PLAN

Proposals have been made in Berlin, Germany, as indicated in the above illustration, to "double deck" Potsdamer Platz, where seven streets converge, permitting vehicular traffic to pass below, while pedestrians would ascend flights of stairs and pass across to any point of exit. Loading platform for vehicles would be reached by descending stairs under the center canopy. This huge spider-like structure has been suggested as one way by which the city's congested traffic can be handled expeditiously.

Highways constitute the main structural framework about which a modern city is built. Equally important as the railroad today are the vehicular highways leading to growing communities beyond the city limits. Where a roadway, adequately paved, enters a city, a field for growth immediately projects itself, particularly if such a highway connects with another city of equal or greater

importance. It is frequently the main line of inter-city communication by automobile and motor busses, an element of increasing importance from year to year. For short hauls between cities motor trucks are superseding the service of railroads, which now pay attention more and more to the long haul business.

Main arteries naturally attract retail establishments with a resultant increase in land values. Many investors watch carefully the growth of towns and cities, and at an early date acquire advan-



TWELVE STREETS CENTER AT ARCH OF TRIUMPH, PARIS

Here may be seen the Arch of Triumph, erected in a circular plaza, into which twelve thoroughfares extend. These give access to all portions of the great French metropolis.

tageous locations for business, either holding or improving the sites with buildings as conditions warrant. "Taxpayers" and gasoline stations may be found every few blocks, later being replaced with more permanent structures as land values increase, and the economic need manifests itself.

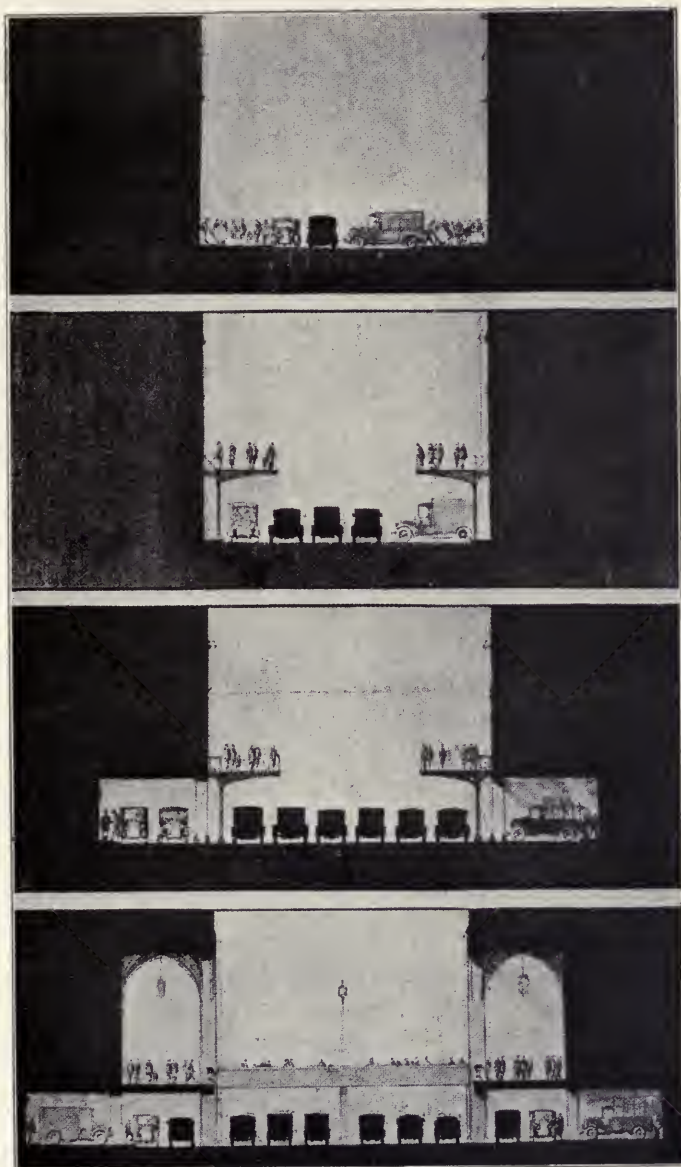
Bordering main outgoing highways subdivisions develop where the inhabitants of the growing community take up their residence. With an electric line, or bus service, not to mention the pavement itself on which vehicular transportation can be had in any form, the areas bordering these highways soon attract the realty operator who is seeking to provide home sections in which people may live. They pass from plain farm lands to gardening and trucking patches, and then blossom forth as subdivisions, with all of the improvements which are called for in these days of real estate development.

In the heart of a growing village or town, there soon becomes evident a trend of growth in which land on one particular street becomes popular for business locations. Sometimes this is prompted by the erection of a general store or hotel, and the clustering about it of other businesses eager to be as near to the center as possible. Soon there are new buildings housing an assortment of trades growing in number as competition in business appears and the buying power of the community develops.

It may be seen that the skeleton structure of a city or town is largely determined by the course of the first routes of travel and traffic. The main thoroughfares connecting settlements are the arteries carrying the heaviest vehicular travel and along these highways the settlement extends itself as population increases. Then follows a process of integration or filling in, whereby the areas between highways are brought into use for urban purposes, and secondary highways and cross streets are laid out. Business tends to centralize in the location of easiest access to the greatest portion of the population of the community, and residences and institutions spread out from the center.

Directional growth of a community is greatly influenced by its street plan. A dead end street may deflect growth along an intersecting cross street. A street extension may stimulate growth and development along its route, and bring into use for various urban purposes vast areas of land that before had little value except for farming. A narrow street may so congest traffic as to cause its deflection to less traveled arteries, and thereby create a new business district. A street too wide may create hazards for pedestrians which will operate as a barrier to expansion.

Many communities suffer from the reputation of being what are known as "one street towns." While there is always one thoroughfare in every city which stands out preeminently as the main



Drawings by Harvey Wiley Corbett, Architect

THE EVOLUTION OF A CITY STREET

At the top is a representation of a congested city thoroughfare of today. Just below is a street with raised passageways for pedestrians. The third diagram shows a further separation of traffic, while below is shown the two level street now being planned for cities.

business artery, nevertheless it is better for a town to have its business district border on a number of streets, especially as it grows in size. These one street towns have what is known in real estate parlance as a "gold strip," where high store rentals are demanded, and readily secured from a certain class of retailers, who are always looking for "one hundred per cent" locations. This drives less prosperous merchants to unimportant side streets or out of business altogether. "One street towns" are not desirable. If possible, growth should be so directed as to prevent excess business development along one street of a city. It is better to have several such busy business thoroughfares where rentals may be equalized, and customers, as well as merchants, may escape unreasonable rental charges arising from congestion of traffic. Los Angeles, as a large city, and Springfield, O., as a small one, are examples of communities which have satisfactorily overcome development on a single main street.

Few cities are designed in an ideal manner. If they were, they probably would have a number of main thoroughfares at least 100 feet wide leading out of town to regions miles away. Small towns and cities should give earnest attention to correcting natural disadvantages as early as possible, acquiring land for widening main thoroughfares, and opening cross streets where needed. Millions upon millions of dollars in future land increment could be created at comparatively small expense when land can be acquired at modest prices for the opening of streets.

A thoroughfare plan that will serve adequately the increased needs of the future is a necessity for all cities. After streets are built solidly with business buildings and apartments, the expense of altering a street plan is so great as to be almost prohibitive. Yet it is apparent that the limited number of through routes for traffic possessed by most cities will be inadequate for the needs of twenty to fifty years hence. Unless measures are taken in time, growth will be checked, and cities may be faced with stagnation or back-breaking financial burdens that could have been avoided by a little vision in street planning.

Two-story streets are now being used as a means of relieving traffic congestion. Chicago already has a two-deck street in Wacker Drive, paralleling the Chicago River, west and south of Michigan Boulevard. Philadelphia is studying the problem, too. The present grade of Chestnut Street would be maintained for vehicular and

pedestrian travel, but beneath would be another level for street cars and such pedestrians as cared to use wide sidewalks, which it is planned to construct there. Philadelphia already has several street car subways, and is planning to spend hundreds of millions during the next ten or fifteen years in overcoming traffic congestion.

Widening many existing highways in the larger cities is imperative if the increasing flow of travel is to be accommodated.



BOSTON'S SPLENDID COMMONWEALTH AVE.

Boston, city of narrow streets, has one of the widest boulevards in the country. Above is Commonwealth Ave. at Charlesgate Ave., a 200 foot artery lined with attractive buildings. Much of the street area is at present given over to park space. Note how a cross street passes underneath the main artery in the foreground.

Where streets are lined with residences this is not a serious problem, but on thoroughfares where large business structures are already in existence, widening is difficult or practically impossible, due to excessive cost. European cities have solved the problem, in part, by creating arcades in buildings, carrying sidewalks alongside of roadways by means of such recessed passageways. Rue de Rivoli in Paris is said to provide the best example of this treatment. This street, and its extension, Rue St. Antoine, has a total

length of two and a quarter miles. The roadway of fifty feet in width is flanked with arcades accommodating sidewalks which average fifteen feet in width, thus affording a street which is really eighty feet wide.

In Piccadilly, London, two arcaded sidewalks exist, one passing through the Ritz Hotel, and the other through the London County Fire office. Many other instances of the use of sidewalk arcades in European cities might be mentioned. Experts who have studied the matter claim that with the prevailing system in Amer-



AMERICA'S WIDEST BUSINESS STREET

Two hundred feet wide and accommodating, in places, eight street car tracks, Canal Street, New Orleans, is the country's widest important business thoroughfare. Formerly an open canal extended down the middle, with roadways on each side. This was later filled in and used for additional street purposes. The street is so wide that shoppers hesitate to cross it. The picture was taken during one of the city's famous Mardi Gras celebrations held annually.

ica of using steel constructed buildings there would be little difficulty in widening many streets in cities in this country were this system to come into general use.

Congestion on streets in large cities, due to the rapidly increasing use of automobiles, has directed attention to the necessity for more and wider streets in almost every community of any size in America. Cities, counties, and even states are establishing highway departments, and setting experts to work planning urban streets and suburban highways for the future. Surveys are being conducted in scores of cities and comprehensive regional highway plans

are being mapped in connection with the development of many large cities. Los Angeles is now engaged in plotting streets in an area 800 miles in extent.

In 1927, the State of New Jersey had presented to it a plan for a state highway system, involving an expenditure of at least \$80,000,000. Conditions and considerations in laying out such a sys-



ARCADED STREETS COMMON IN EUROPE

The Hotel Continental, Paris, is an example of that type of architecture which provides arcades for pedestrian traffic instead of open air sidewalks.

tem are enumerated by William G. Sloan, state highway engineer, as follows:

“It should conform to existing and probable future traffic flows; its capacity should be based on careful analysis and must also meet peak requirements; it should be as direct between its termini as is consistent with costs and economical operation, with due concern for traffic requirements of intermediate points; it should be so located in reference to centers of population that local traffic will not follow it to a point where its capacity for through traffic is impaired and local traffic is inconvenienced; it should be so located, constructed and maintained as to

meet the requirements for economic operation, including type of surface, gradients, curvature, elimination of grade crossings and other sources of danger and delay."

New construction of highways in connection with the plan would have a mileage of 1,974, many existing city streets and rural highways being widened and improved.

In order to reduce vehicular congestion, which is increasing yearly on the streets of great American cities, more or less radical plans are being used. Many boulevards are being restricted to passenger automobile use only, horse drawn vehicles and trucks being



THIS LAKE DISAPPEARED WHEN-

As the result of dam giving way, this lake was lowered, and much marshy ground appeared next to the business district of the town of Salisbury, Md. It was decided to complete the transformation.

barred at all times. Narrow streets are being used for one way vehicular traffic, and very narrow ones limited for pedestrians to pass over them. Cascading signal light systems are being so timed along these main automobile highways that traffic must flow at a rate of at least twenty-five miles an hour, the tendency being to speed up travel. Traffic lanes, marked on pavements with broad white lines, allow four rows of cars to go in one direction and two in the other during morning and evening rush hours.

Parking of automobiles at curbs is being banned on many streets, resulting in the building up of great storage garages in the downtown sections of large cities. Streets are no longer considered useful for the purpose of parking automobiles while owners saun-

ter into stores or office buildings to transact business. They are being regarded, rather, as avenues where vehicular traffic may flow steadily along, and where pedestrians may also have every facility for moving to and fro, or for crossing at corners.

Detroit, proud in calling itself the motor manufacturing hub of the world, has, like most other large cities, been suffering keenly from congestion of cars upon its highways. It is working upon a plan to spend several millions of dollars for widening Woodward Avenue northward from Grand Circus Park to Grand Boulevard. Five large churches and many commercial buildings will have to be



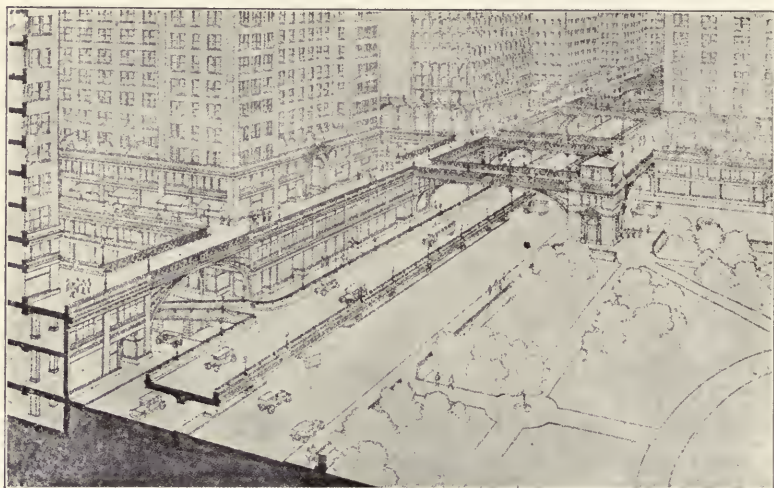
THIS TOWN NEEDED ROOM FOR BUSINESS EXPANSION

This shows how the town's main business thoroughfare was extended out over the place where the lake formerly existed.

moved back or torn down, and a large amount of land will have to be purchased or condemned for the purpose.

At Detroit's northerly limits Woodward Avenue has been developed into a superhighway several hundred feet wide, on which it is planned to operate four tracks for local and rapid transit car service, with wide automobile highways at each side. A large amount of work has been done on this project, and Detroiters refer to it as the world's first great superhighway. Other roadways leading into and out of Detroit have been widened and paved for long distances, both inside and outside of the corporate limits, and the city claims that these new expensive facilities will more than pay for themselves within a few years, by means of taxes collected on increased land values which have been thus created.

It does not seem improbable that several cities in the United States fifty years hence may have populations extending into the several millions. New York public officials are predicting that their city will ultimately have a population of twenty-five million. Los Angeles has made a survey that indicates that it can care for fifteen million inhabitants within its metropolitan district. Herbert Hoover is credited with saying that he foresees a population of from 5,000,000 to 7,000,000 in Los Angeles in a few decades. Chicago has un-



Courtesy Scientific American Magazine

A PLAN FOR ACCOMMODATING VEHICULAR AND PEDESTRIAN TRAFFIC

This view, which is supposed to be from a public park in a large city, shows how street intersections would look if a proposed plan by Ernest Flagg was put into effect. In the lower left hand corner is shown an automobile runway, with another roadway above it. Pedestrians would be confined to upper levels, shown in the picture.

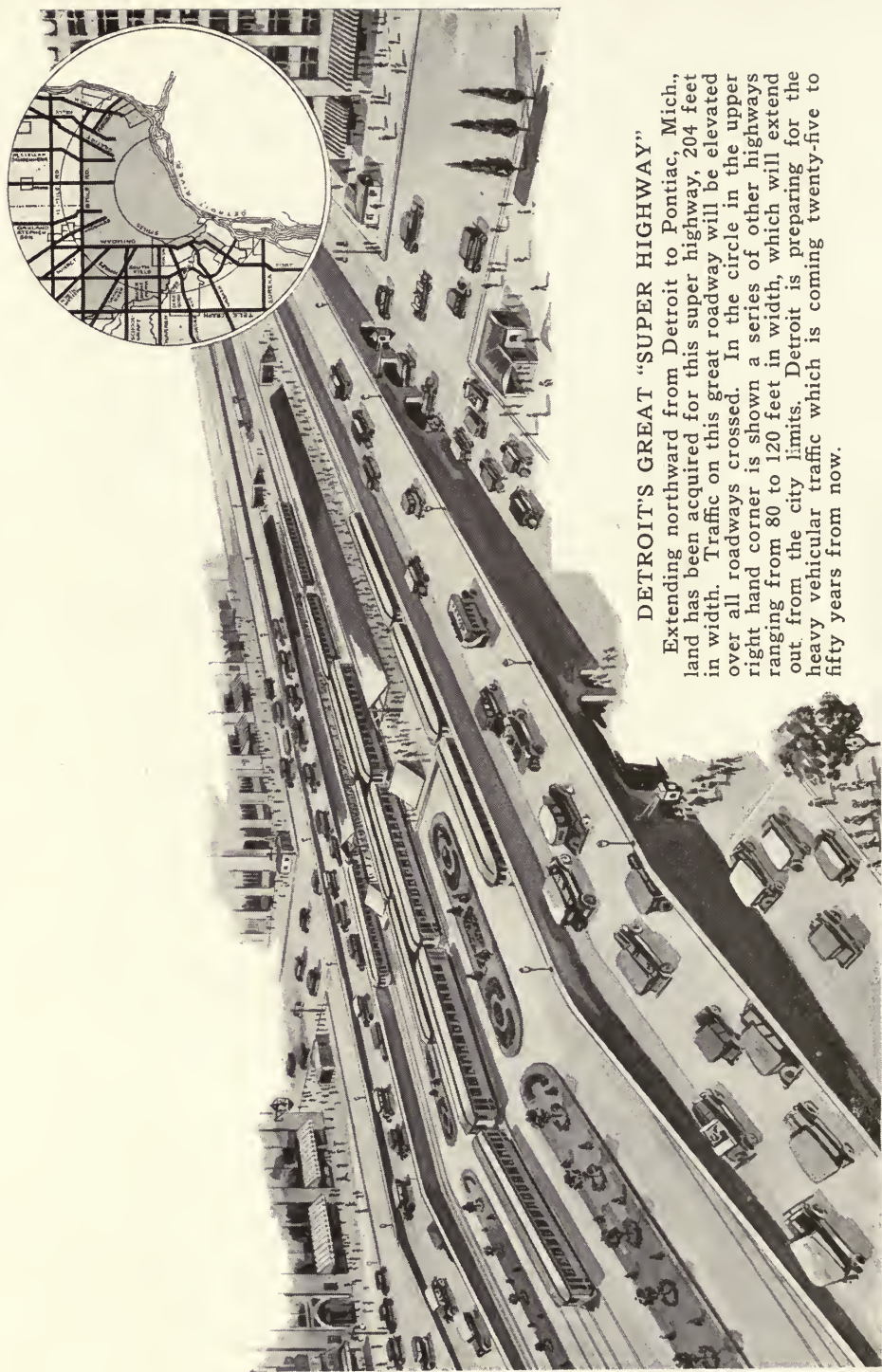
limited areas into which to expand, and cities in the million or near million class today are confidently planning for vast increases in population several decades hence. Cities of such great size must have adequate highway systems and be able to furnish public service accommodations in an efficient manner at a cost that can be borne by those who need and use them.

Lack of facilities, including streets and highways, to transport people and goods from one part of a city to another definitely limits its growth. With the tremendous increase in the use of passenger

automobiles and trucks adequate streets and highways must be provided or the physical growth of a city cannot continue.

Review

- 1—Explain how streets originally developed.
- 2—Why did early planned streets prove adequate?
- 3—How much of a city's area is ordinarily devoted to streets?
- 4—Why do small cities seldom feel the need for wider streets?
- 5—Name three classes of streets.
- 6—What is a suitable width for a main, important highway?
- 7—Why should car tracks be placed in the center of streets?
- 8—Name several American cities having important diagonal thoroughfares.
- 9—Of what value are such diagonal streets?
- 10—Where are subdivisions naturally located?
- 11—What is known as a "one street town"?
- 12—Why is a carefully studied and prepared highway plan desirable?
- 13—Give an example of a "two-deck" street.
- 14—What is an "arcaded" street?
- 15—What is a regional highway plan?
- 16—Name several restrictions being imposed upon the use of streets.
- 18—How may school children be safeguarded from street hazards?
- 19—What two things are vital to the continued growth of great cities?
- 20—What definitely limits a city's growth?



DETROIT'S GREAT "SUPER HIGHWAY"

Extending northward from Detroit to Pontiac, Mich., land has been acquired for this super highway, 204 feet in width. Traffic on this great roadway will be elevated over all roadways crossed. In the circle in the upper right hand corner is shown a series of other highways ranging from 80 to 120 feet in width, which will extend out from the city limits. Detroit is preparing for the heavy vehicular traffic which is coming twenty-five to fifty years from now.

CHAPTER 10.

PUBLIC TRANSIT A FACTOR IN CITY GROWTH

Moving people and goods a primary economic function—
Regional and local facilities equally important—Types of
transportation facilities and the influence they have on
growth—History of transportation—The place of the au-
tomobile—What effect will airplanes have on future
growth and development?

Growth of cities may be considered merely from the standpoint of population increase. Directional growth in cities is the process whereby territorial expansion occurs, new districts being incorporated in the metropolitan limits of the urban community. To understand why people are attracted to live in one community rather than another, many factors and forces contributing to city growth must be considered. The most important of these is transportation.

Moving people and goods from one place to another constitutes one of the primary economic functions in urban life. This process—called transportation—permits people living in New York to enjoy the luxury of California fruits, South American coffee, Chinese silks, and Alaskan furs. Products of far western ranches are brought to great eastern cities to supply food for their inhabitants. It is doubtful whether America's great cities with their millions of inhabitants could have developed had it not been possible to obtain food and other necessities from regions far distant transported quickly and at relatively small cost. Certainly modern civilization as it is known today in Europe and America would have been impossible without the steamship, the railroad and the automobile.

A city so located as to be easily accessible by several routes of travel usually enjoys steady and substantial population increase and, as a result, territorial expansion. Chicago is a lake port at the southerly end of Lake Michigan, thus having excellent water shipping facilities. Transcontinental railway lines tapping all portions of the fertile and productive west here meet the great eastern railroad systems. Is it any wonder that Chicago is the second largest city in population in America? Naturally resulting from this advantageous situation, both commerce and industry have been created, developed and expanded. People have found, in Chicago, employment at good wages in varied lines of business, and have become residents in the

city and its environs. Increase in population made necessary more homes to accommodate people, and more homes required bringing into urban use vast areas of vacant land each year that had previously been devoted to other purposes.

To make it possible for residents to readily move about the city, methods of passenger transportation had to be provided for persons living beyond convenient walking distances. Highways and streets for vehicular travel, street railways and elevated railroads for rapid



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A TRACKLESS TROLLEY CAR

Built a good deal like a large bus, this trolley car had rubber tired wheels, but did not run on a track, although it secured its power from overhead wires much like an ordinary trolley car. It turned around under its own power. This type of locomotion never became popular, due to the efficiency of auto busses which have come so generally into use.

transit were built as needs demanded, and later with the invention and development of the automobile came the motor bus. Not only for passengers was it necessary to provide local and interurban transportation, but also for the carriage of goods and commodities from place to place in the city and its environs to satisfy the requirements

of the inhabitants, and their various commercial and industrial activities.

So, in the study of transportation as a factor in city growth, consideration must be given not only to regional transportation, which contributes to the population growth of a community, but also to local transportation, which so materially influences directional expansion in cities.

Of all the forms of transportation in common use today, the steam railroad has perhaps been responsible for the location and growth of cities to a greater extent than any other factor, except, possibly, the automobile. Probably more new cities were brought into being in the last half of the nineteenth century, coincident with railroad expansion, than may be created in the whole of the present century. New ones are coming into being, it is true, but for the most part they are offshoots of larger parent cities in the immediate neighborhoods. With new-railroad construction proceeding at a very slow pace, and with most of the territorial United States opened up and furnished with transportation of some sort, there is not now the incentive for the development of new trade centers about which cities invariably grow up.

It is interesting to look back and note the influence that steam railroad building had in the latter half of the nineteenth century. With the advent of the railroad came a new force to influence the creation and the development of urban communities. Previously water furnished the best means of transportation, and cities were located on seacoasts where harbor facilities were afforded, and along the banks of navigable rivers, so that in the early history of cities it was found that the only communities attracting large numbers of inhabitants and attaining commercial importance, were those so located as to be readily accessible to vessels. Sometimes such cities were located so as to operate as the focal point where land and water transportation met. Always they served as places in which were collected the products of the surrounding country to await shipment to other markets, and to receive the wares of other cities and nations in exchange.

With the development of railroads, transportation by boats sailing upon rivers and water courses became of secondary importance, eclipsed by the speedier trains tapping the resources of a much wider territory. Railroad builders usually selected routes so as to connect by rail those communities which had already shown evidence of vigor-

ous growth, and, by so doing, added a factor which later surpassed all others as a controlling influence in the further growth. Frequently cities connected by railroads were those that had obtained more or less commercial prominence because of their accessibility by water routes. But many other towns obtained, through the building of railroads, a transportation facility which was necessary in order for them to attain further greatness in commerce or industry.

The impetus given to commerce and industry by the development



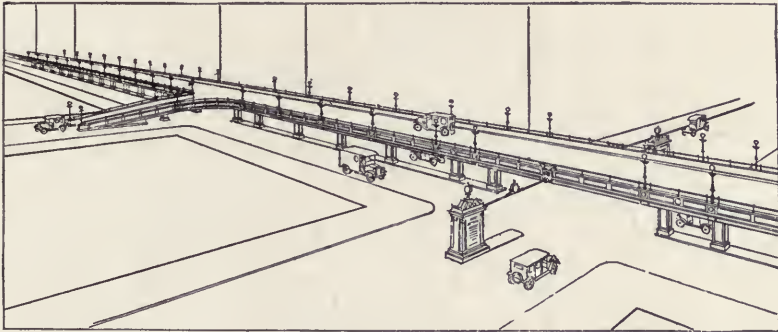
AMERICA'S FINEST RAILROAD TERMINAL

The splendid concourse in the Union Station at Washington, D. C., is 130 feet wide and 760 feet long, containing 2.27 acres of space. It is really a union station, as all railroads entering Washington use it. It is considered one of the architectural gems of the national capital.

of railroads in the United States has, perhaps, been the element of first importance in causing communities to grow in size, and to take on industrial characteristics which are peculiar to the modern American city. It has been said that, without the railroad, America's so-called industrial era, with manufacturing enterprises, highly specialized, drawing raw materials from all corners of the world, could never have been attained.

Transcontinental lines in America were started shortly after the Civil War, cementing the union of eastern and western states, and connecting the Atlantic coast cities with those of the Pacific seaboard.

Outstanding as an example of the growth of a city, due largely to the development of transcontinental railroad transportation, is Omaha, Neb. This city in the early seventies was a hamlet, consisting of a few scattered huts, and an outfitting place for prairie schooners preparing to cross the plains. Then came the Union Pacific Railroad, the first to be constructed connecting the towns of the great west with the cities of the east. With its twin city, Council Bluffs, Omaha began to grow rapidly. Cattle raised on the ranches



HOW RAMPS MAY REDUCE TRAFFIC CONGESTION

Ramps of various sorts may be used for bypassing congested street traffic. Above is an artist's conception of how elevated roadways will facilitate the making of turns.

of the west and southwest were brought to these cities to market, and there grew up important meat packing plants, business flourished, the town became a trade and commercial center, until today Omaha is one of the most important western cities, with an estimated population of 223,535 persons in 1927.

While railroad transportation is of the utmost importance to cities, and has had much to do with their population growth, and resulting territorial expansion, another type is of paramount importance, and that is the service furnished within the city's own borders, and out to adjoining territories, and even beyond to the fringe of towns and cities usually to be found there. Improved methods of rapid transit, which have been developing during the first quarter of the twentieth century, have been adapted to the needs of many cities, and have resulted in wide and rapid expansion.

Methods of transportation, the means by which both products and people are carried from one place to another, have developed with every generation. In the olden days, saddle horses and stage coaches were the sole means at hand. Then, as better roads were built, and cities took on a more metropolitan character, carriages, wagons and the horse cars made their appearance. In the nineties, electric street cars were first placed in operation. The early years of the present century saw the birth of the "horseless carriage," countless improvements of which have produced the modern automobile. Then came the airplane, which is just beginning to prove its worth as a carrier, and in providing ultra-rapid passenger service between large cities, and may soon become a common method of local and inter-urban transit.

This growth of transportation goes hand in hand with the growth of large cities. Improvement in means of public transit has been the prime factor in the evolution of suburban life, the decentralizing of business districts, and the creation of business centers which border the modern city.

Street cars, even when horses provided the motive power, furnished the first marked affect of local transportation upon growth and property values. Cities were enabled to spread out, new residential districts grew up, which, with the availability of transportation facilities, combined choice scenic locations, and desirable homes, with access to the existing business district. The electric car did not change the character but merely enlarged the scope of development. Radial arteries in every direction were first used for street car lines. Then with the advent of crosstown lines, new business centers came into existence at the intersection of radial and crosstown routes.

Larger street cars carried an ever increasing volume of passengers. The distances of new developments from the business districts increased, until the larger cities, New York, Chicago, Philadelphia, and Boston met the demands of a constantly increasing population by overhead transit in the form of elevated railways, the marvel of a generation ago. Scientific development then brought the subway, with its express trains traveling at a speed of from forty to sixty miles an hour. Interurban lines linked the crossroad centers with the city proper, and the suburbs developed. Steam railroads operated commuter service between the large city and the country villages for miles around.

More powerful in its influence, and widespread in its effect, was

the entry of the automobile into general use. The passenger automobile itself has played a large part in furthering the suburban idea, and in fostering uniform growth. Where the interurban system created small communities and hamlets along its right of way, the automobile has sent home builders to every accessible place. This gen-



ELEVATED RAILROAD STATION

In large cities construction of elevated railroads is urged as a solution for transportation problems. Here may be seen the Grand Avenue elevated station in Chicago, showing how the street level has been "roofed" by a great heavy steel trestle work. High speed trains roar along this artificial artery, affording rapid transit for some at the sacrifice of property values along its route.

eral use naturally led to a demand for improved roads, and today mile after mile of pavement evidences the response. The entire countryside is the city man's back yard. The farmer has been

brought closer to his city cousin and they now have many interests in common.

Lately, the motor bus or stage has appeared as a competitor of the street railway and the interurban. Already many cities, both large and small, have bus lines which link up every community for miles around. Many predict that a decade hence will see the end of short haul traffic on the interurban, while others foresee the day when surface cars in cities will give way to palatial busses.

The effect of this development has merely been the furtherance of that caused by the automobile. Now the man of small means can also live in the country, fifteen, twenty, twenty-five miles from his work and travel to and fro on a bus line, many of which maintain twenty and thirty-minute schedules.

Distance today is measured in minutes and not in miles. In the days when street cars were drawn by horses, it took thirty minutes or longer to travel a distance of three or four miles. Since electricity first came into use as motive power for street cars each decade has witnessed further advances in the development of rapid transit facilities, until now one may board a rapid transit car fifteen miles from a central business district, and yet spend no more time in covering the distance than was formerly required to travel four miles in horse cars.

Rapid transit has materially influenced the structure of cities. Population has been scattered over wide areas, making possible the large cities of today, by rendering accessible all sections of a city for residential and business use, and enabling those who are located in suburban areas to carry on their respective occupations in distant parts of the parent city.

Adequate local transportation systems within a city and its suburbs tends to lower the average value of land in city boundaries by rendering new districts accessible, and increasing the quantity of land thus available for residential and industrial purposes. New York has experienced this decrease in residential land values in connection with the construction of its subways.

Subdivision operators have been quick to seize the opportunities afforded by speedy and cheap transportation, and have laid out residential sections at great distances from the center of cities. Some subdivisions adjoining large cities are from ten to twenty miles from the point of origin of the city. Many suburbs have been created having independent civic and business existence, but being entirely

dependent upon the nearby city to furnish employment to most of the residents. All such suburban communities connected with a city by means of railways furnishing cheap transportation add tremendously to the traffic problems of the larger community. Thousands travel daily upon the streets and avenues of the city, finding employ-



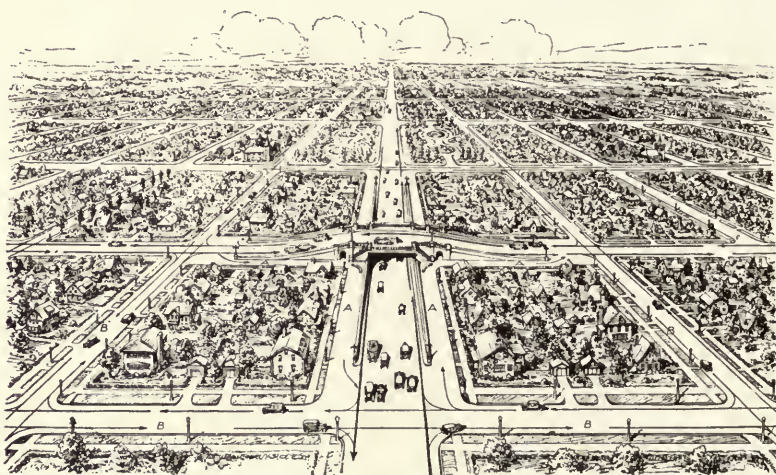
ARE CITIES COMING TO "TWO DECK STREETS"?

Traffic problems in the downtown streets of large cities are becoming so difficult to solve that traction engineers are urging the construction of subways under main thoroughfares. This plan proposes a street excavated for a number of feet in depth, a roadway built over the cut, with street car service below, leaving the upper roadway at the original street level for the use of vehicular and pedestrian traffic.

ment in the huge office buildings and mercantile establishments, or carrying on trade in the retail stores, who actually live in suburban communities.

Only a few of the larger cities of the country have had actual

experience in genuine rapid transit. New York stands first in fast local transportation, although Chicago with its elevated lines has benefited by that form of rapid transit for many years. Philadelphia and Boston also have less extensive rapid transit systems. Boston was the pioneer in subway building. Pittsburgh has excellent commuter service on several of its steam railroad lines. Cleveland has a single transit system to its high grade Heights residential district. This, later, will be expanded to include service over a number of railroad



PROPOSED GRADE SEPARATION PLAN FOR CHICAGO STREETS

This depicts how Chicago plans to construct main outgoing thoroughfares, with more important highways carried over by means of bridges, thus separating rapidly moving traffic. The same idea is being considered in many cities throughout America.

lines radiating in different directions, with a central station in the heart of the city's business district. San Francisco has its commuter service by ferry to Oakland and other points on the bay. Many cities, however, are seriously studying the problem of speedier transportation to their suburban districts, and planning expansion in such directions.

New York's first experience in rapid transit was by means of elevated lines. Built over busy city streets for the most part, these lines are bulky, ugly, and noisy, and interfere with free use of the thoroughfare. They originally detracted from the value of property abutting the thoroughfares so occupied, and only four American

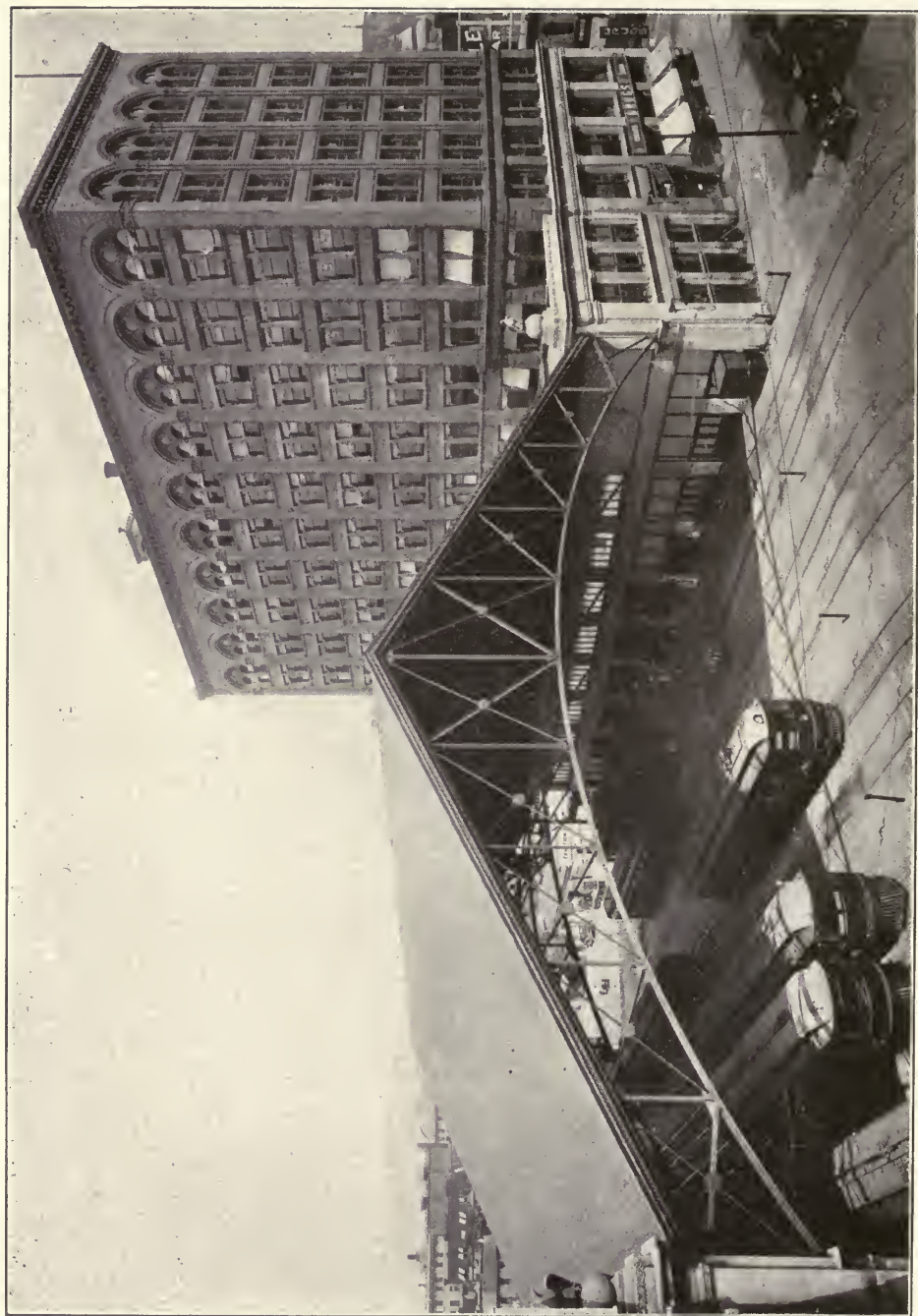
cities have installed elevated roads. These are New York, Chicago, Philadelphia and Boston.

Early in the present century, engineers began studying the possibility of building subways in New York to afford underground rapid transit. The first subway on Manhattan Island was completed October 27, 1904. Later a number of other subways were constructed by the city, and have afforded speedy transportation for vast numbers of patrons.

In New York City, the first rapid transit lines were built at a time when the lower section of the island was densely populated. Population growth was fastest along these new lines. Yet in Brooklyn the territory along new lines, although nearer to the business center of Manhattan, developed slowly. This may have been caused somewhat by the reluctance of many persons to pass over long bridges, or cross under large rivers, preferring to avoid such fancied hazards and travel greater distance under or over solid ground. In recent years, when the building of new transit lines in New York has been a municipal project, designed to further city development rather than for profits, such great areas have been tapped so that comparatively slow radial growth has been noted.

About 1910, a committee of the City Club of New York, while studying the problem of the increase in land values, due to the creation of rapid transit systems, with a view to determining whether land which was benefited by such increase should be required to bear assessments for the building of rapid transit systems, expressed the opinion that very heavy increases in values had occurred as the result of the building of the earlier rapid transit systems. It was estimated that within seven years after the building of the first subway, land values in those portions of Manhattan and the Bronx most directly affected had increased in value \$80,500,000 above the normal increase which would naturally have come for that period. The cost of that part of the subway passing through these districts was about \$13,000,000, while the cost of the entire system from the Battery was \$43,000,000. This represented a net increase in land values in newly opened districts as the result of the construction of the subway of \$67,500,000.

Following the building of the first elevated lines in Chicago, lands from a quarter to a half mile on each side of the new lines took spectacular rises in values, and were quickly allotted and sold for home and apartment sites. In Cleveland, the opening of a new rapid



AMERICA'S LARGEST INTERURBAN DEPOT IS IN INDIANAPOLIS

Four hundred and fifty cars enter this depot each day over fourteen lines. Four million passengers arrive and

transit line, which split in half the time required to reach the Shaker Heights residential district, caused rises in values of from twenty to forty per cent within two years' time, and a population increase from 2,000 in 1922 to 14,000 in 1928.

The effect of rapid transit systems spreading out over a city is to dislocate established centers and create new ones. In New York, constant growth and spread of the city was made possible by rapid transit. Heavy and constant traffic is necessary to make a subway system profitable. New York's growth was chiefly northward. It stretched the shopping district, originally at Chambers Street, to Grand Street, then to Fourteenth Street, later to Thirty-Fourth Street, and on to Forty-Second Street, and now to Fifty-Seventh Street. Broadway, of course, is lined with business establishments far beyond that point.

In the wake of the retail district there followed, as always, the jobbing, wholesale and manufacturing districts, with the customary sprinkling of small banks, shops, and restaurants, which hug the subway and elevated stations, and the crosstown traffic thoroughfares.

In New York, the impetus to land values, although reflected soon after the announcement that the service was to come, really came after the opening of lines, or when construction was definitely assured. After a time, values were stabilized, rising again when business development in a district had turned the speculative prices previously attained into real economic value.

Rapid transit, either elevated or subway, causes the growth of rows of shops along streets which it follows, drawing this class of business away from former centers. Corners are the most valuable where stations are located. Values decline rapidly beyond one-hundred feet distance from the station, coming to a dead low center midway between stations. There are necessarily exceptions to the rule. The result, whatever it is, will reflect the changed utility of the property, due to increased accessibility and advertising value, and the purchasing power of the increased number of persons who, first from necessity, and later from habit, circulate around the stations. The future course of land values along new lines of transit may be forecast to some degree.

City bus lines, some of which have been operated along Fifth Avenue, and over New York streets for many years, do not make for stable land values, although if operated regularly and for sufficient time to establish a record of permanency, they affect rental values

and store centers to some extent as do other transportation agencies.

Some of the best retail shopping streets in large cities have no rail transportation systems on them. Fifth Avenue in New York City has neither overhead, surface, or underground railways. In recent years, motor busses have furnished public transit on this famous street. Nicollet Avenue, Minneapolis' fine business street, and Michigan Boulevard in Chicago, are without rail transportation systems.

Merchants catering to a general trade usually prefer locations on streets having surface, or subway lines, making it possible for all classes of city dwellers to reach their establishments. Shops catering to exclusive trade, however, carrying expensive lines of mer-



THE MODERN DAY MOTOR BUS.

chandise, seek the fashionable street, and often this street is without a railway. Automobiles furnish means of access to such shopping streets, although the advent of the motor bus in the past few years has made these shopping districts accessible to all.

Important as have been the effects of railroad building, the development of interurban lines, and the construction of street car lines upon the structure and growth of modern cities, the entire record has been eclipsed in the past ten or fifteen years in the phenomena of the age—the passenger automobile and its companion, the auto truck. While railroads and electric cars furnished means of transportation that were apparently indispensable, it is quite probable that the country now would go right ahead if they were all abandoned overnight, and motor vehicles were alone left to take their place.

The automobile has probably had a greater influence on the physical growth than any other method of transportation introduced in the history of cities. Although still an infant industry in years, it has reached tremendous proportions. In 1925, when the last federal census report of the industry was compiled, the automotive business ranked first, based on the wholesale value of the product. According to the 1927 report of the National Automobile Chamber of



NOT A PUZZLE BUT A GRIM FACT

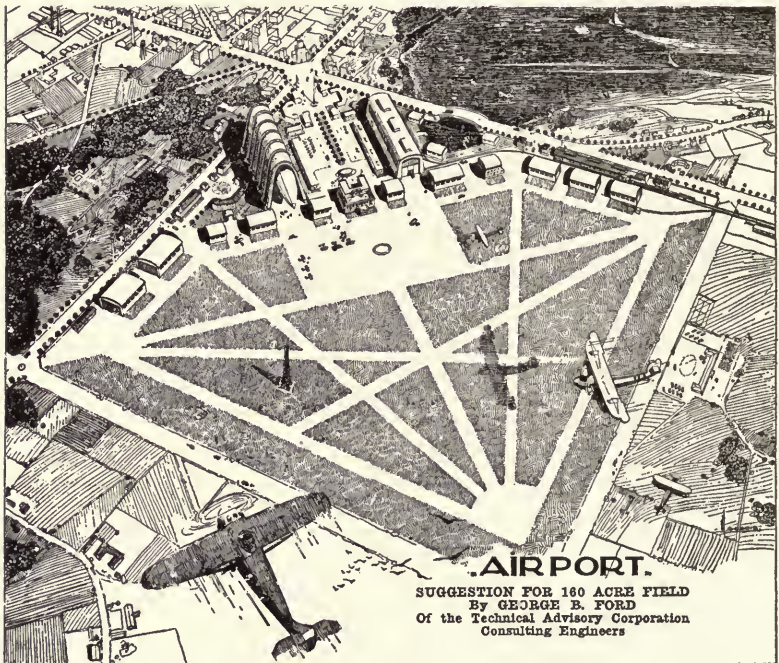
In preparing for the construction of subways tremendous difficulties often are encountered. Here is a New York street which was being prepared for a tube. The maze of pipes, wires, conduits, and sewers had all to be relocated before excavating could proceed. This is one of the reasons why subways are costly to construct.

Commerce, the total amount was \$3,371,855,805. Motor vehicle bodies and parts came ninth with a total of \$1,511,976,000.

There were on January 1, 1928, 28,900,000 automobile, trucks and busses in operation all over the globe. Of the total, 23,125,000, or about eighty percent, were in operation in the United States on

the 3,006,081 miles of highways in this country, 575,000 of which were improved.

The automobile has changed habits of city life, has introduced problems as to the direction, width and character of occupancy of streets, has sent the small merchant out to the little business districts which have sprung up near residential areas, has permitted a workman to live ten, fifteen or twenty miles away from the place where he labors, has made available for residential purpose huge areas of



A TYPICAL CITY AIRPORT OF 160 ACRES

This is a design by the noted city planner, George B. Ford, for a small 160-acre airport for a small city. Many airports run into the hundreds of acres, Cleveland having one comprising nearly 1,000 acres, said to be the largest in America.

lands, which but for automobiles would probably still be used for pasturing cows. The disturbance to, and distribution of land values has been tremendous.

The automobile has in it the essence of all other forms of land transportation. It can be used for pleasure or for business, and both at the same time if necessary. The United States is on wheels,

and an automobile racer in a high powered car can speed from the Atlantic to the Pacific in only a few hours longer than a transcontinental railroad train can make the journey.

What the automobile has done to city growth, and the creation and distribution of city land values, is still little understood, and is just being realized. Individual transportation, as contrasted to mass movement on street cars, railroads and vessels, has seized the popular imagination. The man whose father lived in a neighborhood for fifty years without traveling farther than the center of his own city in that time, is succeeded by children who think nothing of traveling a thousand miles or more every summer on a two weeks vacation in a motor car, visiting a score of cities which their father knew only by name, and some of which were not even in existence a generation ago! The family of today demands not one car but one for every adult member in the family.

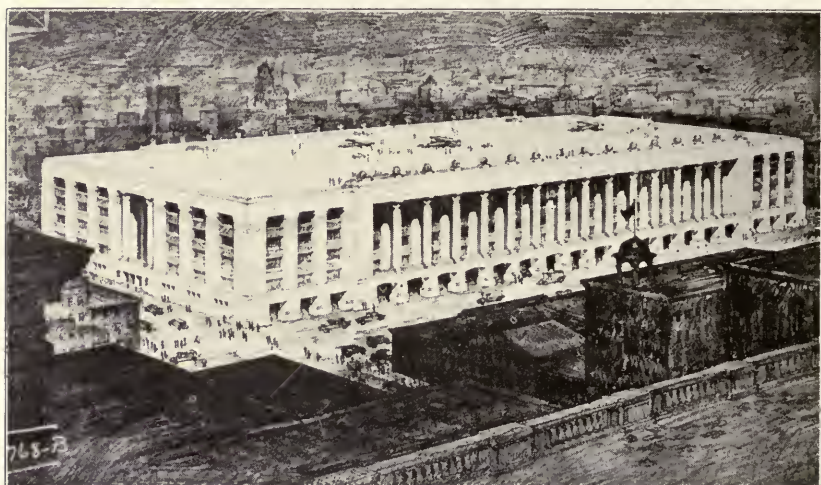
On the very heels of this phenomenal development of transportation by land comes a new and bewildering form of travel by air. Sweeping through the clouds into the stormy skies over the north Atlantic ocean, Lindbergh in thirty-three hours in 1927 dropped down into a Paris airport, the first man to alone span the Atlantic ocean by airplane. Since then the movement for travel by air has been tremendously accelerated.

Far sighted city governments are preparing for the invasion of the airplane, and are establishing suitable landing fields for the use of this new transportation facility. Twenty-five years ago, the automobile was an unknown factor. What city in 1900 would have conceived of the difficulties attendant upon the increase of automobile traffic in American communities?

During the latter half of the nineteenth century, the city that made small preparation for railroads was either passed by, or later subjected to tremendous expense in adjusting its business areas. So the alert city of today considers the problems that transportation through the air will present. The airplane is established beyond the experimental stage as a transportation facility. Passengers, mail and light freight are carried over many regular air routes in this country. It is interesting to speculate on the extent that the airplane may influence American business in cities of the future. It is an element to be reckoned with in municipal life, and steps should be taken by all cities to provide adequate airplane terminals.

The time will come shortly when every city will have several

properly equipped landing fields for the use of its residents and visitors, and for commercial purposes. The extent to which the airplane may come into use is difficult to determine, but that it will be extensively employed in trans-city travel seems certain. With improvements in the design of planes, fuels and motors, which are rapidly coming, greater speed, safety and economy will be attained. A prediction is ventured that it will not be long before a traveler will be able to enter a palatial machine in New York City at four or five o'clock in the afternoon, and eat breakfast next morning in the St. Francis Hotel in San Francisco, the Biltmore Hotel in Los Angeles,



POST OFFICE ROOF WOULD BE LANDING FIELD FOR MAIL AVIATORS

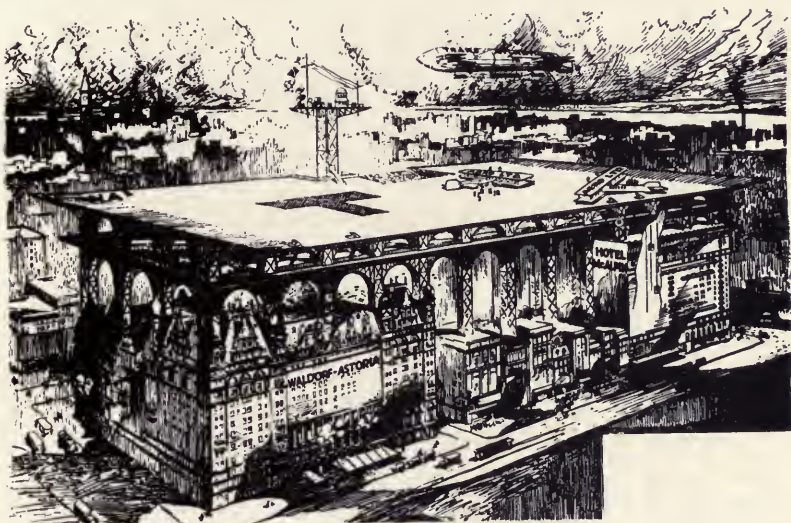
The United States Post Office Department is considering, in connection with plans for a new Chicago Post Office, the use of the roof of the proposed building as a landing field for mail flyers. The site of the proposed improvement would be Canal and Polk Streets, Chicago.

or the Hotel Grant in San Diego. Commercial passenger air routes are now maintained between important cities on the Atlantic Coast, between Cleveland and Detroit, and from Seattle to San Francisco, Los Angeles, San Diego and El Paso, as well as between many other points. The government operates a net work of many air routes.

Designers and operators of big office buildings and hotels in the larger cities of the country are already studying the possibilities of furnishing landing places for airplanes on the roofs of large city buildings. With the development of the helicopter type of airplane,

which rises or descends vertically from a given point, it is easily within the realm of possibility for a business man living fifty or seventy-five miles away from his office, to fly to work and land directly on top of his own office building, sending his machine back home by a pilot, who can return for him in the evening when his work is done.

It is difficult to foresee at this time what effect growth of airplane travel will have on city growth and values. When the automobile first came into use, no one visualized the revolution in city life



A DOWNTOWN AIRPORT FOR NEW YORK CITY

New York City has no downtown airport. Here is a proposed elevated airport which has been planned for on top of the McAlpin Hotel and the Waldorf Astoria. It has been pronounced practical by engineers. A landing space 300 by 700 feet would be provided by this arrangement.

that it was to bring. Time only will tell the story of the effects of the airplane as a medium of transportation, and its effect upon urban land values.

In a great industrial and commercial nation, such as the United States, transportation facilities are of paramount importance. Transportation links together territories and cities separated by imposing distances; it makes neighbors of communities hundreds of miles apart, which half a century ago knew no inter-city travel or communication; it brings within hailing distance the satellite towns and

villages which border every big municipality; it shuttles human beings and goods from place to place within the borders of the city itself, multiplying and changing the uses and values of land. Transportation in America today is the magic of the ages, the builder of fortunes, the indispensable servant harnessed to patiently supply the manifold needs of modern man.

Review

1—Why is the movement of people and goods from one place to another a most important economic function?

2—What factors in transportation led to the rapid growth of Chicago?

3—Wherein does regional and local transportation differ?

4—What form of transportation has been responsible for the initial location and rapid growth of cities?

5—Trace the growth of railroads during the last half of the nineteenth century.

6—What is rapid transit, and how does it affect a city's growth?

7—Explain how cities were able to expand when horse cars were succeeded by trolley cars. By interurbans. By automobiles. By motor bus.

8—Explain what is meant by the statement that distance today is measured in minutes and not in miles.

9—How does adequate transportation lower average land values, and why?

10—How does transportation assist in the locating of neighborhood business sections?

11—What cities in America really have genuine rapid transit systems?

12—What effect on land values did the building of New York's rapid transit subways have?

13—Does the installation of a rapid transit line attract or repel business enterprises?

14—What effect do bus lines have on permanent land values?

15—Name several famous shopping streets in large American cities which have no rail transportation systems upon them.

16—How is the automobile as a transportation agency revolutionizing land values and economic conditions in cities?

17—Wherein has the automobile changed the width and character of streets?

18—What is the difference between what is called “individual” transportation and “mass” transportation?

19—Why is it important that every modern city have one or more airports?

20—Is the use of the airplane in future years on business life in cities to be seriously reckoned with? Why?



(C) Underwood & Underwood

A "MAJOR OPERATION" IMPROVED THIS STREET

Michigan Avenue is Chicago's natural main artery leading to the north end. As far north as Randolph Street, it was a broad boulevard, but there, for many years, it entered a "bottle neck," congesting traffic and preventing business growth. Chicago, at vast expense, widened the thoroughfare until it became one of the finest in the land. Above may be seen the greater portion of the section which was widened south and north of the Chicago River.

CHAPTER 11.

THE BASIS OF LAND VALUES IN CITIES

Land valuable according to its services—Productivity of urban lands—Basis of income capitalization—Best use of land—Demand and supply as economic forces affecting land values—Limited supply of real estate—Price and value—Characteristics of real estate—Location and transportation of primary importance.

Land, fundamentally, is valuable in proportion to the service it is capable of rendering in the satisfaction of human wants. This is true whether used for agricultural purposes where soil fertility is important, or as sites for buildings in urban areas where location is primarily of consequence.

Service that real estate is able to perform is measured by the potential income that may be produced. Sometimes this income is not measured in dollars and cents but exists in the enjoyment afforded to individuals in direct use as in the case of homes. More frequently, however, the value of land is due to the capitalization of its possible earning power in the processes of production of economic goods. Real estate used in manufacturing, agriculture and commerce yields a direct money income which is subject to measurement.

Farm lands produce wheat, corn and other crops which are needed by mankind and may be sold or exchanged for other valuable commodities. It is possible to determine the value in money of such property by capitalizing the net money income at proper money rates.

Urban lands produce income as locations for buildings to house industries and commercial enterprises necessary to civilization. The net return remaining after deducting all costs incident to the production process, a fair yield upon the capital invested in the instruments of production, labor charges, management compensation and the like, when capitalized at current money rates, represents the value attributable to the land.

It is obvious that the foregoing statements are predicated upon the assumption that land involved in such production is fully and adequately used to its best advantage so as to produce the greatest possible money return at the time when the measurement is taken. Otherwise potential income may exist beyond actual return, in which

case allowance must be made. Likewise this assumes a static condition of society and does not allow for changes in use which, over a period of time, might develop and create greater earnings for particular properties.

Urban lands are chiefly valuable because they serve as building sites. Soil composition is of little importance except to the extent that building operations may be made more or less costly by reason thereof. It may be said, therefore, that the foundation of land values in urban districts depends upon the use of lands to support structures to serve man for housing himself or his business.

Demand and supply are fundamental economic forces which affect prices which are paid to obtain the use and possession of land and thus control the goods which may be produced thereon. Demand for land is really a demand for the products or services which land may produce. When a tract of real estate is acquired, the purchaser expects to obtain from its ownership some service which that property may yield. A lot for the location of a home, a tract upon which to build a factory, a site for the erection of an office building are among the various actuating motives in the acquisition of urban land.

The creation of a demand for real property is dependent, primarily, upon increase in population. With more people congregating in a particular area comes the necessity for more land to accommodate their various needs, not an increase in absolute quantity, for land is not reproducible, but rather a conversion of the use of areas from one purpose to another.

Even without population growth, a demand may still exist for land in a given area because of changes in ways of utilizing lands or to accommodate expansion of certain existing users. So, while population increase is primarily important in creating a demand for urban lands, yet other factors may also function to produce the same result.

The development of industry and commerce, improvements in means of communication and transportation, higher standards of living and increased purchasing power due to larger individual incomes are factors which operate in the creation of a desire for land in particular urban areas. Probably these forces have been so effective during the past few years in America as to cause the drift of people from rural to urban districts.

Where particular units in a city are studied in order to account for the presence or absence of demand for lands therein located, not

only do these general factors apply, but the relative advantages or disadvantages of the district with relation to public improvements and utilities, their quantity and quality, property restrictions and zoning regulations, neighborhood style, architecture and the like are important.

The supply of land is limited. *There is just so much and no more available on this planet.* It is not only impossible to reproduce land, but, being immovable, its location cannot be changed. This introduces the element of scarcity. If there existed sufficient quantities of land of all kinds to meet the requirements of man, that is, if the supply were abundant and plentiful, then the service that a particular piece could yield would command only a nominal price, for it would be easy to obtain other equally desirable tracts to serve the same purpose.

Land always is plentiful, in one sense, in that there is sufficient to supply the actual physical and living requirements of mankind. Some farms, however, are more fertile than others and therefore produce greater returns. Some building sites are situated nearer to concentrated population areas and are more desirable as locations for structures housing commercial businesses. Although there is *enough* land when considered in physical quantity, yet as measured in quality for particular uses at particular places, there may exist a shortage. So in relation to the demand for land to be used for particular purposes the supply is more or less limited.

Price is the translation of value into money units. In the conflict between the demand for, and the supply of, land of certain grades, a price is reached which marks the point of balance between the two forces. Price sometimes represents something other than mere market value. One may desire to own a particular house which strikes his fancy because of its location and its architecture. This desire may be eccentric and individual and not in any sense common to more than one person. The personal demand for this property may be so strong that a price will be paid to acquire it which does not represent either the cost of physical reproduction or its income possibilities. No one else would find in the particular building as great a subjective value. Here price does not represent market value, and yet it maintains the point of equilibrium between demand and supply.

Real estate in its very nature enjoys certain inherent attributes which make it valuable without reference to use or location. It is



BANK BUILDS AROUND A CORNER

When this bank in Canton, O., found it could not acquire a corner parcel of land on which to enlarge its quarters, it built around the corner, so that if it is secured later the monumental entrance can be made the center of a large building spreading to lots on each side. There are many examples to be found in large cities, where disinclination on the part of an owner to sell has caused the parcel to remain unimproved for many years. This bank, however, is looking forward to the time when the desired expansion can be made, and has planned its building accordingly.

an absolute necessity. Man must live out of and upon the soil and its products. From it he obtains food, materials for clothing, lumber, metal, brick and stone for buildings, and upon it he finds support for structures to house himself and his activities.

Not being reproducible in exact identity, particular tracts of land enjoy the characteristic of individuality. Duplication is therefore impossible. It is possible, however, to *substitute* one parcel for another. The supply of real estate is sufficiently large to make it possible for a buyer to compare the relative characteristics of different parcels and choose according to his tastes. Sometimes he may be forced to select a somewhat less desirable property because of price differences or other factors which make acquisition of the better tract impossible from his standpoint. Still his needs are satisfied with the poorer property.

Because land is durable and not subject to destruction, it is possible to enjoy its use for long periods of time and through successive generations. A price may be obtained, therefore, for its use which represents a pure rental return upon its value, without the necessity of setting up a fund to ultimately replace the capital invested. This durability makes land desirable as the basis *for the extension of credit*. Being immobile, it is not subject to transportation from place to place. This tends to create price variations in proportion to the supply and demand at the particular location. Land favorably located enjoys a stability of value which cannot be changed by flooding the market with similar goods produced at less costs as in the case of personal property. Location of real estate is therefore very significant from the standpoint of relative value.

The universal desire to own real estate has created in the human mind a prestige which attaches to one who is able to and does acquire it. This prestige operates to create a market demand for real estate which is less subject to violent fluctuations than in the demand for other commodities. Stability in value results in making real estate an ideal form of investment for most people.

All land *is individual and unique* in character. In this respect it differs from commodities which are readily reproduced in quantity and bear identical features. Each tract of land differs in some material respect from its neighbor, and therefore possesses different elements of desirability. Values in land are not absolute but relative, so that with each parcel of land essentially different and not re-

producible, independent judgment exercises a controlling force in the determination of its worth.

The difference between land and other commodities is recognized by the shopper seeking to buy several boxes of matches. He does not make an individual examination of each match to see if it satisfies his personal requirement. He buys by class, his want being fulfilled when he is furnished the kind of goods requested.

The purchaser of land never goes forth to buy several lots without regard to where they are situated, their size or their physical characteristics. He examines each lot separately and his buying depends upon whether the land meets his personal fancy and requirements. Matches are essentially alike, but parcels of land possess different characteristics.

One writer has said, "The value of bread is expressed in need; the value of a glittering diamond is expressed in desire." The value of real estate may be either or both.

An adjoining lot may be a present *need* to an owner whose business has outgrown its quarters, but to him a farm in California or Florida would be a *desire*. He measures the value of business property in terms of what it will produce for him in relation to his business. The farm may be worth as mere land only a few hundred dollars, yet *if it suits his fancy* he may pay thousands for it.

The subjective value of a piece of real estate depends either upon its direct utility to the owner or the utility of the commodities which he hopes to obtain in exchange therefor. It is a *personal use* value as distinguished from a *use* value which is general to all.

Objective value in land is what is generally termed market value. Economists suggest a rule for the determination of market price, stating that purchasers with the highest subjective exchange values are paired off against sellers with the lowest subjective exchange values until the process results in a pair exchanging at a price which is then considered the market price. This price is reached by a process of bargaining, a practice as old as the ages, and one associated with most real estate transactions.

As has been pointed out, heretofore, the value of land in cities and urban communities depends not upon the physical products produced by it, as in the case of agricultural areas, but upon intangible services. Rent is thus obtained which is the income which land produces.

A general store located at a country cross roads, is placed there because of its accessibility to the surrounding country side. The site of the store ceases to be useful for its soil productivity and becomes valuable because of its location in a place where farmers from all directions may find it convenient to patronize the little store thereon constructed.

Others seek lands nearby for home sites, other shops are opened



(C) Underwood & Underwood

NOT ALL BUILDINGS ARE USED BY HUMAN TENANTS

Here is a structure twelve stories in height, but only the ground floor is used for business purposes, all space above being devoted to the great god Advertising. This is Broadway, New York, from Forty-sixth Street.

and gradually a small village develops. With growth of population, the site at the cross roads where the original country store is situated becomes more and more valuable because there are more people close by to patronize the storekeeper.

So primarily important, when urban land values are considered, is *location* with reference to population centers. Differences in urban values result from differences in location advantage with reference to population.

Since land in cities is valuable because of the indirect return produced from its use as the foundation upon which to build structures to house man and his business, then the site which is most frequented by the greatest number of people who are able and willing to buy, is invariably the spot where greatest land value exists. Located upon a site in such a place, a merchant enjoys the best opportunity to bring his wares to the attention and inspection of those whom he expects to attract as buyers. His opportunity for profits arising out of the merchandising process is greater than that of his competitor located in a place where fewer people congregate. Location with reference to trading convenience is a primary factor in determining the value of one tract of urban land in competition with another from the standpoint of retail commercial use.

Since cities usually originate at a cross road of travel, frequently the point of highest retail land value is found nearby. Various businesses grow up and distribute themselves about and near the point of origin. People find it convenient and necessary to assemble in this business district to conduct their shopping. Demand for locations in such high valued districts usually exceeds the supply, and values increase with the increase of population dependent upon this particular center for trading purposes.

With the growth of a community, transportation facilities develop to furnish those living beyond walking distance of the retail business center means of reaching it. Street railway lines intersect at or radiate from this center, busses have principal stations close by and other types of passenger transport seek proximity for stations.

Industrial plants seek locations with advantages of railway and water transportation and the best served sites command the highest unit values for such purposes. Available labor supply is of almost equal importance. So it may be seen that *location* is of greatest importance in determining land values in urban communities, but location with reference to different factors, however. For retail districts, the controlling factor establishing value is the best and greatest purchasing power, the place where the most buyers congregate. For manufacturing establishments, location with reference to transportation lines by water or rail and situation affording ample labor for the manufacturing operations.

Prof. Ernest M. Fisher of the University of Michigan discusses

the basis of land values in urban communities in the following paragraphs quoted from his book, "Principles of Real Estate Practice":

"The demand for land in cities arises from commercial or residential needs. In general, it will be evident this demand depends directly upon population. Land values will be highest where population is most concentrated and least valuable, as urban land, where population is most thinly scattered.

"The elements of value in urban real estate which is used for different purposes are found in the peculiar adaptability of the land for its purpose. Real estate, for example, that is highly desirable for manufacturing purposes is usually equally undesirable for residences. It is necessary, therefore, to examine, first, why real estate is desirable for each of the general purposes for which it is used, and then by what means a definite valuation can be arrived at for a specific property." (1)

Urban land is more or less valuable in proportion to the value of the services it will perform. The services which such land renders is measured in the amount of rent which the particular site commands as a place upon which to locate a structure or to operate a business enterprise. The highest rent results from using a site for retail commercial purposes. Grading down through uses including wholesale, commercial, manufacturing, storage, and residential, varying rents are obtainable according to the location of the property and the demand and supply of land for the particular purposes to which it is devoted. Where there exists a scarcity of land best adaptable for a particular use, the value of the property available increases.

Population is the principal force creating value in urban land. Variations in value among different tracts depends upon location, transportation, public utilities and many other factors which make one or another site more or less desirable.

Review

- 1—Why is land valuable?
- 2—How may land services be measured?
- 3—What is "net return"?
- 4—How do urban lands produce income?

(1) Ernest Fisher "Principles of Real Estate Practice," page 104, Macmillan Co., 1925.

5—Define “demand and supply” with reference to land.

6—Does population increase affect demand for land? If so, how?

7—Are other factors besides population increase important in creating a demand for real estate?

8—How is the supply of land limited?

9—What is meant by the element of scarcity?

10—In what sense is land plentiful?

11—What is price?

12—Does price always correspond with market value?

13—What are the inherent characteristics of land?

14—What is subjective value of land?

15—What is objective value in land?

16—What is the principal force creating value in land?



THE PROBLEM OF SPECIAL PURPOSE BUILDINGS

Here are two tall narrow buildings erected on Euclid Ave., Cleveland. As designed they were just bank buildings. On the left is a rather freakish structure fourteen stories high and only thirty feet wide. On the right the building has eighteen stories and the lot is forty-five feet wide. The one at the left, being abandoned for a bank headquarters, had to be remodeled at a cost of nearly \$60,000 for the ground floor alone. It was vacant for several years before the owners decided on this large expenditure. The bank on the left was also vacant for months, due to an amalgamation, but finally had to be sold at a great sacrifice to a competing bank because it could not be remodeled at any kind of a reasonable cost.

CHAPTER 12.

EVIDENCES OF REAL ESTATE VALUE

Elements of real estate value outlined and discussed—
Dynamic factors of value—Location and transportation—
Methods used in obtaining data for appraisal—How appraisals are obtained.

Valuing land cannot be classed as an exact science. The mere fact that each parcel of land is individual and unique in character, possessing features which distinguish it from any other land, makes the task of the evaluator seeking to ascertain its worth very difficult. Primarily the worth of land is based upon its utility. Agricultural property is valuable in proportion to its soil fertility, modified by its location with reference to centers where crops raised may be advantageously sold. Transportation, afforded through accessibility, therefore plays an important place in the value of farm lands.

Urban property produces its return in functioning as building sites and for parks and recreational areas. Soil fertility plays little, if any, part in the value of land for urban uses. However, location, soil conditions, accessibility, transportation facilities and many other factors influence the desirability, and, therefore, the value, of one tract over another.

Value of real estate must be measured by some means in order that commerce in this commodity may be carried on. The translation of value of land and buildings into dollars is the task of the real estate appraiser. In order to accomplish this process of ascertaining the value of real estate as expressed in money, definite factors of value must be applied to determine the relative importance of each tract in relation to others. The capacity to know what elements create real estate values and the ability to make correct deductions from the evidences at hand and the assumptions as to future uses to which a property may be put are obviously the basis of the appraisal process.

The valuing of real estate is, in fact, a procedure whereby the favorable factors tending to increase the value of a particular tract are weighed against the unfavorable influences detracting from its value, and the result is the value estimate. Inasmuch as there

is little similarity existing between parcels of real estate there is no way of accurately testing the conclusion as to value of any individual appraiser, for no units exactly alike are available for sale, therefore testing, such as afforded by an active commodity market where many sales occur of like units of merchandise is absent.

The data and information which the appraiser assembles in the process of making an appraisal may differ materially in different cases. Every influence which has any bearing upon the use to which a parcel of land may be put must be considered. The price at which a specific piece of property will sell is affected by all the considerations which influence the demand for, or the supply of, real estate. The completeness of the information in the possession of the appraiser before he reaches his estimate of value is, therefore, the first essential to a sound conclusion. The analysis of this data and the logic of the conclusions resulting are, of course, of final importance. Evidences of value which must be considered in an appraisal are, therefore, the subject matter of this discussion.

There are four cardinal factors which determine value in land. The first is *location*, which includes accessibility; the second is *utility*, which comprehends its capacity, to produce; the third is *shape* and *topography*, and the fourth is *size*.

So much depends upon the judgment of the appraiser that absolute accuracy in valuation can never be achieved. If it were possible to scientifically measure the influence of each of these factors, then perhaps a theoretical value could be ascertained which would approach scientific accuracy. The inherent characteristics of real estate as an economic commodity, making its ownership and possession more or less desirable than some other type of goods, have been previously discussed in chapter eleven on the "Basis of Value in Land." Here the influences which may be called dynamic are taken up. Snyder and Roby are quoted as follows: ⁽¹⁾

"By dynamic is meant those elements in real estate values which are constantly subject to modification or change. They are often considered the dominant factors which cause the differences in prices for various parcels. From one point of view this is justified because the inherent characteristics are present in the value of every piece of property. The dynamic elements are not of such uniform prevalence and their influence differs widely. Pieces of property vary widely in their attractiveness because of

(1) "*Fundamentals in Real Estate*," by Blake Snyder and Ralph W. Roby, Harper Bros., New York and London, 1927, Pp. 43 and 44.

the presence or absence of these factors and differences in values may thus be credited to them alone."

". . . Now it is in order to turn to the characteristics which explain why one piece of property is more valuable than another. These are:

1. Transportation and location
2. Environment
3. Material composition
4. Size and shape
5. Building restrictions and zoning ordinances
6. Taxation
7. Appreciation
8. Obsolescence
9. Depreciation."

In the process of studying these dynamic characteristics an appraiser of real estate must examine a property with reference to its location in relation to various other lands used for the same or different purposes. Location is geographical position. Urban lands are usually compared with other tracts within the boundaries of the particular urban area although comparisons are frequently made of lands similarly situated in several distinct and separate urban areas.

An industrial site may be critically compared with another many miles away and the factors of relative value of each studied. Assuming either property has sufficient area for the manufacturing enterprise desiring location, then, in arriving at a valuation of either, the appraiser will carefully study the locations with reference to railroad shipping facilities, switching possibilities, transportation afforded employees by street cars, accessibility to local markets, availability of labor supply, size and shape of the particular tracts with reference to the character of the use to which they are to be put, and any other factors which are favorable or unfavorable in influencing his opinion of the properties being compared. He must also consider the sale prices which have been obtained for lands nearby or in locations fairly comparable. After assembling all his facts, his analysis will result in a conclusion which he may express in a report to his client giving his valuation of each property and the reasons therefor.

In the same manner will the appraiser valuing a residence property compare the location of the lot with other lands devoted to similar uses. If the property is improved with a dwelling then he must value the building, determining its reproductive cost

and its worth as of the time when the appraisal is to date, its market or sale price, which may be more or less than its structural value and which is materially affected by location with reference to schools, churches, distance from trade centers and commercial districts, the occupancy of surrounding residences, the character and style of the particular neighborhood and the like.

Transportation tends to counteract and broaden the element of location and thus affects real estate values. In the Shaker Heights residential development of Cleveland, the subdividers selected lands located six miles and more from the central business district of the city. This development bordered, on one side, a section where resided many foreigners employed in industrial plants. The most direct route leading from the central retail business district of Cleveland led through the heart of the Ghetto. Surely this was not a logical situs for an elite residential community planned to be the finest in America! Until a privately owned electric railway was constructed, leading to this suburb, and providing rapid transit, the development of the Village of Shaker Heights was slow. Street car service and excellent boulevards connecting with city streets through a more desirable residential district did not seem to entice residents to this ideal suburb. Within five years after the service on the rapid transit line had been inaugurated, however, the village had increased from two thousand inhabitants to a population of fourteen thousand.

Generally speaking, the importance of location must be measured with reference to the particular use for which the property is to be employed. Residential property adjacent to a railroad suffers depression in value, while the same influence tends to increase the value of such lands for manufacturing purposes. Corner lots on heavily traveled thoroughfares have a high potential retail business value but are less valuable than inside lots on quieter and less frequented streets when measured by residential property standards.

With distance measured *in minutes instead of miles*, location is materially affected by transit facilities. A tract of land located fifteen or twenty miles from the downtown business district of a city may today be the logical location for a fine suburban residential district providing speedy transportation is furnished either by rapid transit steam or electric railways or bus lines and where broad and well paved highways for speeding motor cars lead into the community.

Downtown business properties vary more in proportion to relative location than land devoted to other uses. Here the distance of a few hundred feet from the best retail commercial district may result in a difference in value of thousands of dollars per foot front. Pedestrian travel is all important to retail merchants who obtain patronage from the passers-by. Mere numbers of pedestrians, however, is not conclusive in determining the best retail locations. It is the *purpose* and *purchasing power* that are more important than numbers. A street leading to a railway station or a ferry may have great numbers of people passing at all hours of the day, but relatively few do any buying. Merchants prefer other locations where the passers-by are actual purchasers.

Environment is important in varying degrees and in different ways is dependent upon the character of use to which property is to be put. A factory may be a nuisance in a residential neighborhood and detract from property values. A railroad, with roaring trains rushing by, causes annoyance to home dwellers, but to a district intended for industrial use, a railroad and the presence of other factories are almost essential.

The presence of a church edifice in the heart of a retail commercial district is a detriment to adjoining realty values but in a residential section it may be desirable. The character, wealth and social standing of the inhabitants of a residential area influence materially the relative prices that may be obtained for locations therein when compared with territories quite as favorably situated geographically and topographically but less favored by the presence of the more successful type of citizens.

A skyscraper office building located in a cornfield would be worth absolutely nothing. The cost and the value of the materials assembled in its construction would be no measure of value because in its location it would produce no rental return and substantial sums would be required to cause its destruction. So the material composition of a building must be considered only in connection with whether or not its site is suitably improved with a building of the best and highest utility.

Assuming that such a condition exists, a building being an adequate improvement for the land and capable of producing in that location the highest return, then the character of the construction, structural materials, costs at the time of building, present reproduction costs, depreciation and obsolescence are proper ele-

ments for the appraiser to consider in determining his estimate of value.

The size of a parcel of land may be sufficient for ordinary use but its shape may destroy much of its value for some purposes. A lot on Wall Street, New York, three feet wide by four hundred feet in depth, would contain twelve hundred square feet. An equal area in square feet would be a tract twenty by sixty feet. The first would have only a nuisance or "hold-up" value, while the latter would be worth a large sum of money. Plottage, therefore, is of supreme importance when considered in connection with the utilization of urban areas. An irregularly shaped parcel may satisfy the needs of a manufacturing plant, but its shape may cause great expense to the builder of a commercial structure. The appraiser of real estate, consequently, will add or subtract from his appraisal estimate according to the plottage and size of a lot with reference to the uses to which its location makes it adaptable.

Another element of value is found in artificial limitations imposed upon the use of property by building restrictions and zoning ordinances. Building restrictions are usually imposed by private contracts contained in deeds, leases or special agreements. Zoning ordinances include what are commonly called building code provisions and are the result of an effort of public legislative and administrative bodies to direct and control the use of private lands through the exercise of police power. Without discussing the relative merits of these limitations, it is quite apparent that such control affects the value of property subjected to such regulation either beneficially or detrimentally. A lot located in the heart of a business district may be restricted by ancient deed covenants against commercial use. The neighborhood, having become commercial since the imposition of the restrictions, may be entirely unsuited for the uses contemplated when the limitations were placed. No one cares to willingly reside in the heart of a noisy business district so that such a use is impossible for practical reasons. The deed restrictions, however, prohibit any other uses. Assuming these restrictions are legal and enforceable, the property has small value in spite of the fact that, next door, a lot similar in size may be worth thousands of dollars per foot front.

However, in residential districts restrictions and limitations, whether private or public, which contemplate the continuance of

the area for homes, tend to increase the value of lands therein. People ordinarily desire to live in districts that are quiet and secluded, where wide streets are bordered on each side by broad lawns embellished with shrubbery and flower beds. Business enterprises require buildings entirely foreign in design and construction to those found in a home district. Ordinarily business structures are unsightly architecturally when compared with modern residences. Therefore, anything which tends to preserve the integrity of a residential area will tend to enhance the value of such lands. This is accomplished by private deed restrictions and zoning laws. Where an appraiser finds a residential neighborhood rigidly zoned or restricted he necessarily recognizes more stable conditions. These varying factors are elements which must be considered in finding the value of real property. The process of appraisal is the balancing of the advantageous elements against those which are detrimental and striking a resultant valuation.

Valuations are made for many purposes and in various ways. The appraiser may be instructed to find market value, or his orders may direct him to ascertain reproduction cost. Economic or income value may likewise be determined. The client may ask for a price that can be obtained at a forced sale. He may desire information as to the value of land at some particular date in the past or the valuator's opinion of the probable value at some time in the future. So the process of estimating the value of real estate must be governed by the purpose for which the valuation is to be used. Most appraisals, however, are made for the purpose of determining the present day *market value*.

Market value is the expression, in money, of the meeting of the minds of a buyer willing but not compelled to buy, and a seller willing but not compelled to sell. This rule is recognized by law as applicable to real estate transactions although the units dealt in are not alike. A market price is determined, moreover, as the result of a number of sales which have taken place at nearly the same time and place and at approximately a uniform price.

It is obviously true that in real estate transactions the units sold are not identical and therefore market value can never be as exactly determined as in other commodities. The best that an appraiser can do in fixing a value for a tract of land is to balance the favorable against the unfavorable characteristics and from his calculations estimate the probable price at which the parcel would

sell if actually changing hands under the conditions existing at the time of the appraisal. The problem is somewhat simplified if, in the district where the parcel is located, land values are relatively stable. Then he may use sales of nearby lands as criteria of value. If, however, speculative conditions exist, he must also weigh the relative change in value of lands used for the same purpose even if differing considerably in location and quality and not be guided entirely by sales in the immediate neighborhood.

Scattered sales of vacant land do not represent stable market prices, as a general rule. A number of transactions occurring in a district and within a comparatively short period of time are fairly reliable indications of market value providing the units of measurement are similar and no unusual influences are operative, such as material variations in plottage, topography and the like. Often sellers forced to sell are discouraged in holding their property or are influenced to sell for reasons which should not, and do not, fundamentally control values. Likewise a purchaser may pay more than a tract of land is worth because of some reason which makes the parcel of particular interest or value to him.

Sales are frequent when values are fluctuating rapidly and a speculative market condition exists. This fact tends to keep the price fairly well marked. When sales are rare, values are somewhat more stable and normal and in the absence of sales to indicate the market, the appraiser must seek evidence of value from rentals and income to assist in the valuation.

Many indications of value must be considered by the land appraiser. In valuing residential property, for instance, he must inspect the individual land to be valued. Peculiar physical characteristics should be noted. Is the land level? Is it wet or marshy? What kind of soil conditions exist—stone, clay, sand or shale? Is it wooded? Topography, with particular reference to the accessibility from the nearest street or road, must be considered. Geographical location should receive careful consideration. Observation of surrounding properties will aid the appraiser in estimating the value of the land for the particular use intended. If in a residential district, the character of the homes nearby should be observed. In a business district, the type of buildings and the class of business accommodated are important in determining the use value of the tract to be appraised.

Having completed his inspection of the property, the appraiser

next examines data to ascertain size, shape and relative location. This discloses to him, in a comprehensive way, the position of the land with reference to thoroughfares and local streets, transportation facilities, its location with reference to business districts, and areas devoted to uses similar to the one to which the property is put or intended to be put.

Investigation of sales comes next in order. In analyzing sales it is necessary to weigh each transaction before accepting it as a criterion of value. In an active market with many sales occurring, transactions covering not to exceed the period of a year should be given consideration. Sometimes an examination over only a few months will be sufficient. Where transfers are infrequent then perhaps an examination should cover a period of two or three years. Occasionally it is necessary to consider sales beyond that time. Asking price is rarely a criterion of value.

The area reviewed should compare as nearly as possible in character with the land to be appraised. In business districts it is usually sufficient to consider only transfers of properties upon the same street and within a few hundred feet of the property in question. Sometimes like or similar tracts upon different streets may be compared in order to ascertain values. Where corners are involved often the appraiser is required to compare corners of similar nature some distance from the parcel under consideration.

In cities where long term leases have come into extensive use, it is proper for an appraiser to carefully examine the lease terms on tracts within the area under consideration where the transactions are not too remote in time. Leases upon business property are sometimes made upon a basis of from ten to fifteen per cent higher than the property would sell for upon the market for cash, so that allowance may be made for such differential in value, if present. Where a lease is being appraised a careful examination of its terms must be made in order to ascertain conditions which may influence the rentals paid. If restrictive covenants are found they must be carefully analyzed before the lease can be appraised.

In valuing industrial properties, sales may be considered within a wider area than a few hundred feet from the property in point. The nature of manufacturing land is different from commercial frontage. Display frontage is comparatively unimportant. Size and location with reference to railroads, labor supply and the like is of more moment. The only limitation upon the area within

which sales should be considered is marked by the inquiry as to whether the land is similar in nature and has been transferred within a space of time not so remote as to fall within a period when conditions governing the market were essentially different.

An analysis of sales of residential properties must cover a much wider area than when business frontage is under consideration. Lots located upon streets many hundreds of feet away may properly be compared when they are similar in character and so situated as to be of like nature.

Store leases should be considered when business frontage is being appraised. Rents paid for locations upon streets devoted to commercial use are evidence of value placed upon property in the neighborhood by merchants who conduct business in the area. In this connection the character of stores in the area must be considered in order to determine whether the property is devoted to its highest use and whether it is reasonable to expect future business development of a nature which will add value to the property in question.

A careful appraiser will consider the income from an improved property. In order to analyze income, it is necessary to determine whether the land is improved and utilized properly in comparison with other buildings within the district. If the appraiser is satisfied that the improvement is adequate then he should ascertain whether the management is competent and the property productive of the highest return possible.

A property should produce, net to the owner, when properly improved, at least six per cent upon the market value of the land and eight per cent upon the building. If it does not do so, having made proper allowances for taxes, assessments, cost of upkeep and other items of maintenance expense, it is an indication that either the improvement is inadequate or poorly placed, or that the management is faulty. If the assumed market value is too high, such a study will readily show the error in the valuation arrived at.

Minor influences, such as traffic conditions, land restrictions, the presence or absence of transportation facilities and the like must be studied by the conscientious appraiser before reaching his valuation of any given tract of land. The general reputation of the district bears a pronounced relation to value. Particularly is this true in residential properties. Some streets are considered fashionable

and lots located thereon attain higher value and bring better prices when sold than they ordinarily would sell for in another district. In business areas certain districts sometimes bear the reputation of being "cheap."

In analyzing transactions, forced sales, and those which are merely transfers within a family or personal group of investors, have little significance in fixing market value. Where a property is "knocked down" at sheriff's sale it is clear that so many elements of uncertainty enter into the transaction that it cannot be considered a free sale occurring between a seller ready, willing and able to sell and a buyer, ready, willing and able to buy, neither of whom are coerced into the transaction. Likewise transfers made through condemnation proceedings or under threat of condemnation are not adequate indications of value.

The ultimate factor in determining the value of a given piece of land is *the seasoned judgment of the appraiser*. His valuation is good or bad in proportion to his ability to exercise sound judgment in weighing the various factors of value which exist in land. No rigid rules can be set down for the appraisal of land which will dispense with the sound, individual judgment of the person making the valuation. Rules and methods can only be guides, sales and rentals can never be more than sign posts to mark the way towards a correct conclusion. Land valuation is not an exact science. It is an occupation excelled in only after years of intensive study and wide experience.

Review

1—May the valuation of land be classed as an exact science? If not, why not?

2—How is agricultural land valuable?

3—How does urban land produce income?

4—Who acts as the interpreter of land values?

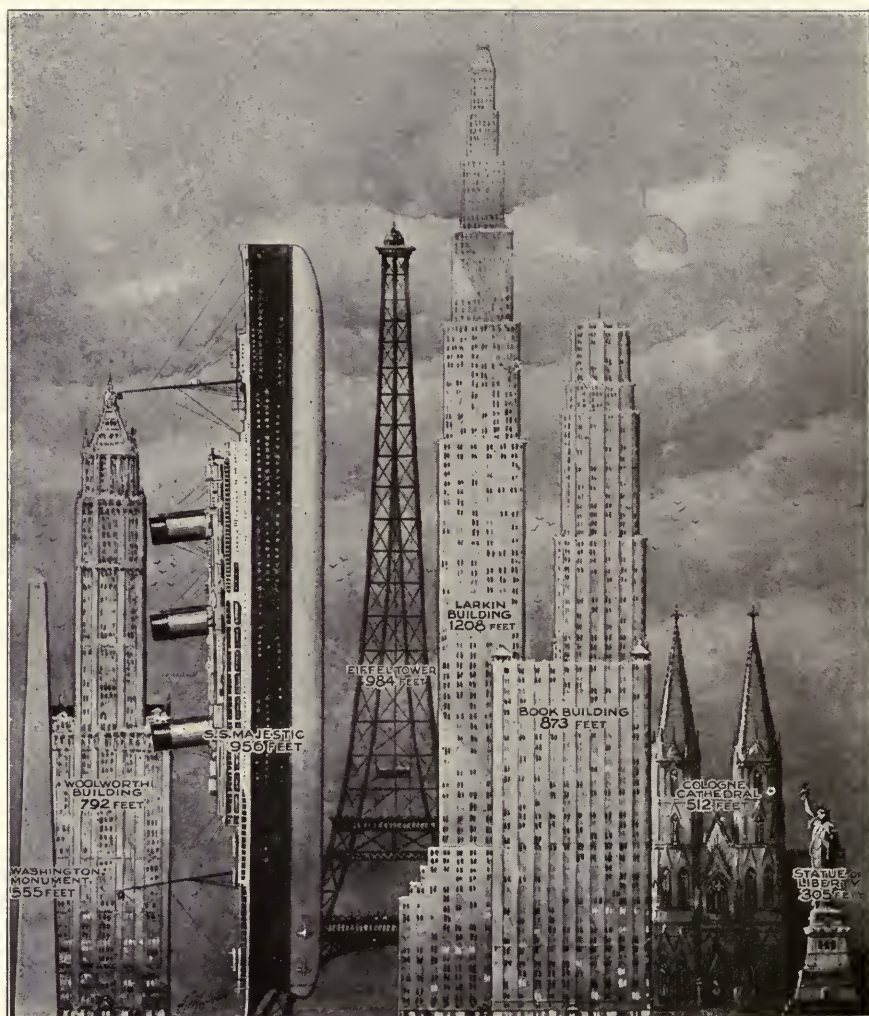
5—What is the process of an appraisal of land?

6—What information should an appraiser assemble in valuing a tract of land?

7—What is of final importance in making an appraisal?

8—What are the cardinal factors of value in land?

- 9—Explain the term “Dynamic factors in real estate values”.
- 10—How does transportation affect real estate value?
- 11—Does size and plottage of a parcel of land affect its value?
- 12—How do building restrictions affect property value?
- 13—Are zoning laws beneficial or detrimental to land values?
- 14—May valuations be made with differing objectives?
- 15—What is market value in land?
- 16—Are units of real estate exactly identical?
- 17—If not, does such a dissimilarity affect values of each parcel?
- 18—What importance do scattered sales have to the appraiser?
- 19—Is income analysis important in fixing real property values?



Courtesy Scientific American Magazine

TALL STRUCTURES OF TODAY AND TOMORROW

The Eiffel Tower, Paris, is still the highest structure reared by man, but higher ones are planned. The Woolworth Building is still the world's highest building, but the Larkin Building, planned for New York, will dwarf it. This shows the comparative heights of the world's largest structures of today and tomorrow.

CHAPTER 13.

OTHER FACTORS INFLUENCING VALUES

How physical conditions affect values—Beneficial and detrimental factors—Topography is important—Plottage affects value—Booms and labor disturbances leave their marks—Undesirable buildings decrease values—Adverse conditions in residential areas—Various kinds of nuisances noted—Availability for use an important element.

Heretofore fundamental factors influencing the value of urban land have been considered. Certain of those operate favorably or adversely to great areas of real estate, others affect only small districts. Many others, however, are encountered, in connection with use and development of urban lands.

The building of subways beneath certain streets in the city of New York created new and higher values along the various routes involving literally adjoining acres of land for miles in length. The extension of a surface street car line in any city will bring into use for residential purposes large areas of land which immediately assume higher valuations.

Frequently less important conditions exist or are created which influence the value of real estate in a more limited area. These may be transitory or temporary or may be of such duration as to be semi-permanent in nature. These problems may be easily discerned or, at times, may be difficult of solution.

In studying influences which may be termed secondary in their effect upon land values, it is well to remember that property is valuable to an owner only in proportion to the income either real or potential that it is capable of producing. This income, moreover, may be subjective and not measurable in money, such as the return which a householder obtains over rent saving from his investment in a home, or, it may be a direct money yield which property is capable of producing for its use or through sale of products which are produced. Objective value is the name given to the type last described and its study is interesting to the observer of urban land values.

Rent that a property will yield is materially influenced by factors of greater or less importance. Consider, for a moment, a

property located in a retail shopping district which has been served for years by a certain street car line. It is dependent upon that line to transport to and from the district the people who are its patrons. If this line be removed or abandoned and no other form of transportation substituted for it, all merchants occupying space in buildings in the section will suffer loss of patronage and be unable to pay the rentals charged. As a natural result, stores will be vacated, rentals will decline and land values will depreciate.

Real estate is sensitive to influences and forces which operate advantageously or adversely to its rent producing capacity and, therefore, its value. Whatever operates favorably upon the merchant and his ability to pay rent in a business district is the immediate concern of a property owner.

Physical conditions existing in the boundaries of a city have an important affect on land values. A street that mounts a hill or leads to the bank of a stream is decidedly affected, as to the land values along its way, by such condition. On residential streets trees are planted in order to provide shade over the sidewalks, and when these trees attain full growth arching over the roadway and favoring the entire street with shade, they add greatly to the desirability of a residential street and increase land values. They add an element of forest beauty that attracts most people. Given two streets in a neighborhood as nearly alike as possible except that one has shade trees and the other has not, without exception the lots on the shaded street will sell first and bring higher prices per foot front.

In business districts sun and shade influence the desirability of a building site. Almost invariably the side of the street which is subjected to the rays of the afternoon sun in summer is less valuable, the difference in intensively used business districts ranging from 10 to 30 per cent. This condition affects merchants' window displays. The rays of the afternoon sun shining on a window display of fine and delicately colored fabrics may fade colors and damage goods. Therefore awnings must be erected to shade the windows. While awnings furnish effectual protection from the sun's rays, yet they cut off light from the interior of the store and its windows and partially block the visibility of the window from the street.

The passer-by, as a general thing, avoids overhead canopies except as a protection from rain or extremely hot sunshine and,

in avoiding awnings, walks at such a distance from the store window that "window shopping" is thereby reduced. Therefore, most merchants whenever possible seek locations upon a street which is benefitted by shade during as many hours of the day as possible. Especially is this so of stores handling women's goods. It is also true that during summer months pedestrians seek the shady side of the street and usually the foot traffic on that side of the street is much heavier. This tendency is so marked that experts now recognize the shady side of the street as the most valuable side for retail trade, except where special features tend to modify or alter the situation. In Chicago, the west side of State Street carries somewhat higher value to merchants than the east side. In Akron, the difference between the two sides of Main Street, which runs north and south, is very noticeable. Practically all the large department and women's stores are on the west side of the street which benefits from afternoon shade. Likewise land values are higher on the west side.

As a general rule, streets extending in the general direction of prevailing winds are not as desirable for business locations as streets running at right angles to the direction of such winds. Pedestrians avoid streets where the currents of wind during winter months blow virtual gales, making walking difficult and distasteful. These streets are also less desirable in summer months when, during rain storms, water is blown at times almost horizontally under umbrellas and against shoppers' faces. Street dust is also carried down these streets on windy days with much force, often filling the eyes of pedestrians and covering their clothes.

Traffic noises occasioned by passing street cars, elevated trains and heavy truck and motor vehicle traffic, are detrimental to residential land values. People desire quiet neighborhoods for their homes, away from din and noise. In business districts noise is not considered so detrimental to the value of a street for locations of stores and is offset by the benefits accruing by reason of the accessibility of transportation facilities afforded.

Large open areas such as parks, squares, circles and playgrounds are considered of advantage to residential districts. They afford additional air and light and lend beauty and spaciousness to a neighborhood making it more desirable for the location of homes. People congregate in cities chiefly because of economic pressure. Almost everyone dislikes to live and move in cramped, congested quar-

ters, and parks and open areas give to the city dweller a spacious freedom that residents of smaller towns and country districts always enjoy.

Cities planned in recent years make ample provision for open areas by platting, at frequent intervals, parks, squares, circles and playgrounds throughout their residential districts. Crowds that assemble in any public park, on a summer night, demonstrate conclusively the desirability of open spaces in home districts.

In business districts open areas have conflicting influences. Beneficial influences are :



WHERE THIS SWAMP ONCE EXISTED-

Some years ago this drear swamp was an eyesore near Wakefield, New York. Someone had a vision and suggested that it be reclaimed.

1. Afford light and air to properties fronting upon the area.
2. Add to a location; bordering upon the area, advertising value, both because of prominence and added visibility and sign value.
3. Usually they are less noisy.
4. Often a transfer point for car lines, bringing thousands from various sections of the city who are potential shoppers.
5. Used frequently as a place for public assemblies of city dwellers, all of whom are potential shoppers.

Detrimental Effects are :

1. Most retail businesses dealing in the substantial commodities of life thrive on the competition of nearby

stores. Open spaces permit the use of but one side of the street for business.

2. Usually difficult to cross in winter seasons during storms accompanied by winds. Sidewalks are often more difficult to keep clean of snow and sleet.

3. Police regulation of traffic through such areas often prohibits parking of motor vehicles, thereby drawing shoppers to districts where parking regulations are more favorable.

The most important physical factors influencing values on a business street are hills and slopes. The slightest grade in a street



NOW EXTENDS THIS STATELY BOULEVARD

The Bronx River Parkway drive was projected, the swamp was drained, filling proceeded, roadways were built, lawns laid out and trees planted. Today the place is a beauty spot. Millions of dollars worth of land was reclaimed, and devoted to public use.

reduces the value of the street as a shopping center. This is due to a number of reasons:

1. Pedestrians dislike climbing a hill or slope.
2. It is difficult to make store fronts conform to sloping sidewalks.
3. Displays of merchandise are less effective when placed in windows where the level of vision changes as the pedestrian passes.
4. Sidewalks in winter when slippery are more dangerous to pedestrians and are therefore avoided.
5. Pedestrians climbing the grade, especially if steep,

are intent on the added difficulties in walking and are less inclined to observe window displays.

Plottage is the term applied to the physical features of a tract of land, such as size, shape and location with reference to other tracts, whereby a particular tract has the highest value for a given purpose. Plottage value varies with the location, and the particular purpose for which the tract is required. An operator acquiring



WHEN THE TRAFFIC COP SAYS "STOP!"

This is not a mob scene in a melodrama, but an all day occurrence at State and Madison Streets, Chicago, said to be one of the country's busiest street intersections. It is duplicated daily at hundreds of other corners in cities all over the country. How much more traffic of this sort can the average city accommodate?

land for the construction of an arcade running from street to street would consider a tract of land extending through under one ownership, as having added plottage value for such a purpose. Having once acquired several parcels for such an arcade connecting two streets, the combination of the parcels under one ownership would add plottage value not previously possessed by any one of the in-

dividual tracts. Expressing the idea in a somewhat different manner, suppose that underlying an arcade, running from street to street, were two tracts of land, each 100x200 feet in size and each located fronting upon parallel streets and extending in depth so that the back lines met, the tracts of land and the portion of the arcade building built upon each tract being owned by separate owners but the arcade building operated jointly. Should either owner erect a wall on his rear lot line, blocking the arcade, the added value which each tract has by reason of its junction with the other and joint operation would instantly vanish.

Land, triangular in shape, formed by the junction of intersecting streets known as "flat iron" corners has plottage value for retail development because of the great amount of display window space afforded by the shape of the parcel and also because of the prominence of the position such a parcel holds at such an intersection. Any corner tract of land in a business district has plottage value which will vary according to the size, shape and topography of the particular tract.

Where cities open new streets through built up districts, excess land is frequently acquired on each side of the proposed right of way. These strips, sometimes quite narrow, are sold after the street is completed on a basis of value proportionately much higher than they cost largely because of the increment of land value afforded by corner frontage on two streets.

Shape has much to do with plottage value, so also has the size of a parcel. If an owner controls a parcel of land 10 by 50 feet in size, it is quite obvious that he cannot erect a fifteen story office building upon it. Sizable office buildings have been built upon tracts having frontages of not to exceed 30 feet, yet the cost of a building on such a small tract is proportionately greater than one constructed on a lot of double the frontage and like depth. The larger area has plottage value for the purpose of a large building which the smaller one does not possess. Land running from a street to an alley in the rear has plottage value over a lot that lacks rear access. Generally speaking, a rectangularly shaped area has plottage advantages over an irregularly shaped parcel. Occasionally a strategically located parcel, even though irregular in shape, is considered more valuable than one of regular shape.

Topographical and physical features of a tract of land may sometimes be changed or modified so that disadvantages may be



DANGER LURKS AT CITY CORNERS

Where streets meet at acute angles, forming a flatiron, a long dangerous street crossing is necessary. Flatiron corners often become among the most valuable locations in a retail district, and to overcome the traffic difficulty during busy hours rows of standards are now often placed across such intersections, allowing vehicular traffic to percolate slowly through narrow gaps, thus protecting pedestrians. This intersection at Euclid Avenue and E. 14th Street, Cleveland, presents a particularly aggravated condition, which has been corrected by the use of permanent rows of solid standards.

partly or wholly remedied and the various parcels of land comprising it enjoy increased value as a result. Streets have been cut through hills, steep grades eliminated, swampy land filled and valleys bridged in order to make available land which otherwise was impossible or difficult to profitably improve. Many times these faults in physical contour or in street and city plan are of such a character that either they cannot be corrected or the cost is almost prohibitive.

There are, however, many conditions which operate temporarily to the detriment or advantage of particular properties which either may be changed or will, over a period of time, right themselves. Business conditions, industrial booms or depressions, labor disturbances and the like fall into this classification. A condition affecting retail business is noted in towns where there has been a boom in a single industry which perhaps has ridden to a fall because of a general business depression throughout the country. There is a sudden falling off in employment, store collections are slow, scores of customers desert the town to secure employment elsewhere and merchants immediately find that their big expense—rent—cannot be met. Store rooms are thrown on the market with no one offering to take them at any rental for the time being. This immediately affects the entire real estate situation in a city suffering from this condition which often takes months or even several years to overcome.

A great labor disturbance in a town immediately reflects itself all along the business line, ultimately falling upon the landlord who is unable to collect rent and the banker who finds it impossible to secure payments on loans. In towns where great industrial disturbances have occurred, business property values have been seriously affected for extended periods.

Merchants occupying stores adjoining sites which are being improved with new buildings feel a marked slowing up in trade due to the blocking of sidewalks while new building operations are being carried on. Trade in adjoining retail stores is seriously depressed until unnatural barriers to the flow of traffic are removed.

Great catastrophes like fires, floods, earthquakes, and tidal waves, of course, disrupt business in addition to causing heavy property losses. It takes months, sometimes years, to get back to normal conditions and the rebuilding of a whole business section in a city so affected is sometimes necessary. Witness Dayton and Hamilton

in Ohio after the great floods of 1913; San Francisco after its fire in 1906 and Galveston after the tidal wave, some years ago.

Constructing new or relaying of old pavements, digging of large sewers and reconstruction of bridges, when such operations occur on highways leading to business districts have more or less affect on travel of shoppers from the territories beyond. Ease and



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BETTER BE SOBER WHEN YOU CLIMB THIS STREET

The Street that was called Straight, in Damascus, had nothing on this curious thoroughfare, Lombard Street, San Francisco. The incline was so steep that it had to be built like a pretzel. It's a dizzy climb, but it was the best the city's engineers could do.

convenience are sought by shoppers and if an artificial barrier is erected in the pathway to the retail section where a shopper is accustomed to go, he or she may go elsewhere to trade. Rebuilding of a retail business establishment, even if it means simply the installation of a new front on a store, will almost wreck a merchant's

business while the work is in progress. Despite appealing signs erected by the merchant inviting trade, the public will not enter and purchase but prefer usually to pass coldly by and shop in a more convenient and presentable place.

Where rural land is just coming into use for business as on streets in the outskirts of a city, the character of buildings first erected often determines for a time, at least, the value of the land. Such districts furnish many sites which compete with one another. Usually the only difference existing, barring topographical variations, is in transportation facilities. Building operators may largely control values in such new territories by the type and character of development. Where such land is placed upon the market before there is an economic demand for it, it usually passes into the ownership of poor people attracted by low prices, who build cheap homes or shops, and create a shabby district which may act as a barrier to future high grade growth in that direction.

Since land in a city is almost always dependent upon buildings to make it produce revenue, it is a necessary corollary that improper or inadequate improvements upon land will tend, at least temporarily, to depress its value. A building unsuited to a location upon which it is placed not only tends to depress the value of its own site but reflects damaging influence upon other land nearby.

Failure of property owners to realize the importance of good architecture and the necessity of keeping land properly improved has resulted in entire retail districts shifting during the course of a few years, from one well defined section to another with a corresponding loss in land value in the older district. Enterprising merchants, eager to keep pace with public requirements, will not hesitate to forsake one street and pioneer in a new territory where modern buildings are provided. Business, once lost, is often difficult or impossible to recover, with a consequent lessening of the earning power of property naturally located where it should have earned maximum rentals but which is handicapped by reason of the fact that buildings demanded by up-to-date merchants are not provided at the time they are needed.

Businesses of questionable character always depress values of land. Reputable merchants will not open shops in the neighborhood of such business. The character of the tenancy is correspondingly low, irresponsible and sometimes questionable in character. Rentals become difficult to collect, buildings deteriorate under rough

usage and suffer for lack of repair and consequently land values are lowered.

Influences which detract, either permanently or temporarily, from the value of particular parcels and areas of land may be classed under the general head of nuisances. Abatement may, under certain conditions, be obtained at law. Often, however, the principle that an owner may use his property as he likes may bar redress through the courts.

Residential districts are more easily affected by adverse conditions than business properties although land values are lower, so that it may be said that the erection of almost any other building than a dwelling in a residential section constitutes a nuisance. Even apartments and terraces, though residential in character, adversely affect a high grade home district.

All kinds of factories, even those which emit neither smell nor noise, power houses and electric light plants, hospitals, business buildings, hotel and apartment houses, swamps, mosquitoes and odors, and all cheap, old and dilapidated buildings constitute nuisances. Unsightly, rough and rocky land, stagnant pools, creek beds, abandoned streets, in fact anything which detracts from the attractiveness of a neighborhood for residential use may be considered nuisances.

In former years when horses were used extensively, a street upon which was located either private or public stables was undesirable for home use. Street railroads on residential streets sometimes detract from values unless the street is wide and tracks are placed in the center with attractive grass plots between them and the roadway. Streets with car lines upon them eventually attract shops and apartment houses, and when this semi-business development begins the desirability of such a street for residential purposes declines. Dwellings themselves may be nuisances to their neighbors if unusual or peculiar in type, unsightly, out of repair, unpainted, or if covering an abnormal proportion of lot area, as where the entire lot is covered except for light wells.

Other things which have been held to be nuisances by the courts under certain circumstances are: electric sign boards, ball parks, always a nuisance to a residential district; bawdy houses, saloons, junk yards, blast furnaces, sewage disposal plants, garbage disposal plants, soap and glue factories, cess pools, cemeteries, coal

sheds and coal yards, trestles, jails and penitentiaries and certain other public buildings. All of these are nuisances in themselves because such uses render a neighborhood undesirable as a residential district.



INCREASING SHOW WINDOW EFFICIENCY

The architects who built The Peoples Gas Co.'s fine office building on Michigan Avenue, fronting on Grant Park, Chicago, adorned it with stately pillars of granite, placing large plate glass windows in the recesses. It was found that passersby would not step in between these pillars to look at paraphernalia the gas company wanted to popularize. Windows then were projected out to the street, and their efficiency as advertising mediums was greatly increased.

Few are subject to injunction or abatement as nuisances at law unless special circumstances justify.

Business property, too, is subject to the effect of nuisances.

High grade retail business property is detrimentally affected by tracts of land upon which old dilapidated buildings, formerly residences, warehouses, or abandoned churches or shabby public buildings are located. Adjoining store vacancies, whether caused by rebuilding, fire, removals, failures or what not; dilapidations, whether of buildings, sidewalks, streets, or surroundings; streams, and anything which will adversely affect the conduct of business in a given location may be considered a nuisance in fact though usually not considered to be at law so as to afford remedy through the courts.

In the valuation of land a distinction must be recognized between physical characteristics inherent in a property itself, and the manner or mode of its ownership. Topography, geographical location, soil conditions and the utilization of nearby properties are all influences which affect the value of a tract of land favorably or adversely without reference in any way to the tenure under which it is held.

The manner by which land is held is equally important in determining its exchange value as are its physical conditions. Conditions surrounding its ownership often will cause an otherwise valuable property to be unmarketable. Possession of land unaccompanied by the right to its use and the power of its disposition is valueless. Value in land is its utility or worth measured in money. Of what value would be a tract of land in the heart of downtown New York unless the owner had the right to use it for profit or to permit others to so use it? Such land might have ideal physical conditions and yet have no value to the person owning it because of restrictions limiting its use. It may readily be seen, therefore, that land values are not solely dependent upon location, desirability, physical and topographical features and other characteristics inherent in the particular property itself, but also upon its availability for use.

Tenure is the name given to the mode of holding real property. The conditions surrounding the holding determine the type of land tenure. Tenure is a factor of prime importance in the determination of the value of real property.

The form of ownership under which a property is held influences the value of the interest of the holder favorably or unfavorably. An unencumbered fee simple estate is a quality of title beyond which there is nothing higher in individual ownership and which brings to its possessor the highest value. Limited estates are less valuable. While the quality or quantity of ownership does not

permanently affect intrinsic land value, yet temporarily and until limitations are removed, the marketability of a property held through complicated estates and interests will be materially limited and during the existence of such encumbrances, any sale will reflect in lower price the limitations.

The factors which are discussed herein as influencing value of land must be recognized as not inherent to land itself but only to particular parcels or areas upon which particular influences operate. Usually the conditions may be prevented, remedied or entirely eliminated, and so are considered transient or temporary in character. Notwithstanding this, the effect upon value is quite real during their existence.

Review

- 1—What are "secondary" influences affecting land values?
- 2—Explain the statement "Real estate is sensitive to influences and forces which operate advantageously or adversely to its rent producing capacity."
- 3—Do store rents which a merchant pays influence land values?
- 4—How do hills and valleys affect land values?
- 5—Is shade desirable in a residential district?
- 6—How does shade and sun influence the desirability of a building site in a commercial district?
- 7—Which side of State Street in Chicago is more valuable—and why?
- 8—Does a large open space help or hurt a retail business district?
- 9—Explain "plottage value."
- 10—Do general business conditions in a given locality affect the land values therein?
- 11—Do disturbed labor conditions influence land values?
- 12—Explain the effect of reconstruction operations upon business nearby.
- 13—What is the effect of inadequate improvements upon the value of a given tract of land?
- 14—Is it ever wise to destroy a structurally sound building? If so, when?
- 15—What is the effect upon a district of businesses of a questionable character?
- 16—What is a nuisance with relation to land values?
- 17—What is tenure?
- 18—Is the form of ownership of land important with reference to its value?



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WILL CHURCHES COME TO THIS?

Above may be seen the Chicago Temple Building, located at the southeast corner of Washington and Clark Streets, Chicago. This property has been owned for many years by the First Methodist Episcopal Church of Chicago, which desired to use it as a downtown meeting place. The building follows typical church architecture, with an assembly hall on the ground floor, seating about 1250 persons, and offices above. The large tower on the corner reminds one of a church steeple, which indeed it is. The building cost about \$3,000,000, and

CHAPTER 14.

BUSINESS DISTRICT VALUATIONS

Highest land values found in business districts—"Peak" land values explained—Competition of locations in business areas—"Hundred Per Cent" Locations—Rent paying capacity of various businesses differ—Examples of businesses and ability to pay comparative rents—Valuation of land in business districts—Capitalization process—Store rents as a measure of value of land.

Highest land values are found where there is the greatest concentration of population and wealth. In the last analysis, purchasing power and population operate to create or increase values. Therefore, since land attains its highest value where population is most congested and where the demands of the greatest number must be satisfied, land in cities used solely as the foundation for structures to house the business carried on therein may be considered as having the greatest money value.

Land which is put to the use which will produce the highest economic return is usually found in the downtown retail business districts of a city. Here may be found "peak" land values, where merchants catering to the many needs of the people living in the community occupy space for their stores. These merchants pay the highest prices possible to obtain use of property and thereby produce rental returns from which values may be calculated.

Business districts, so-called, are those sections in which there is a more or less concentration of the commercial activities of a city and its people. It is usually impossible to definitely determine exact borders of such a district for there is a gradual change from one use to another. It is easy enough to mark what is known as the central business district of a city, however, and its approximate boundaries may be located.

Within the borders of a district devoted to business purposes most land is definitely given over to such uses. Obviously such areas do not show a homogeneity of land use. A hardware store neighbors with a meat market, a department store with a specialty shop and a hotel adjoins a bank building. Some of the area may be vacant and unused, or occupied for such temporary use as outdoor automobile parking.

Locations in urban business districts are in constant competition one with the other. This competition may be for the same or entirely different uses. For instance one site may be clearly more valuable as a location for a hotel than another in the same general locality. This may be due to the advantage which one has over the other in size, shape, composition of soil, or position with reference to transportation terminals or other uses. Locations, likewise, may compete for entirely different utilities. One site may be quite valuable for a retail department store and another better suited for a theatre. The first site may be where many street car lines meet and loop and great throngs of people congregate. Here intensive shopping is carried on and a store catering to the many needs of the great mass of people will prosper better than if placed upon another site away from this traffic point but where patrons may be attracted to find entertainment.

Advantages inherent in one site may adapt it for one use and not for another. These differing characteristics, advantages and disadvantages, when measured according to importance to different businesses create a natural selection of land according to potential use. Diversified business exists in all districts devoted to such use and the variation in value of land located therein frequently depends upon the character of the business which will find a particular property best adaptable for its use.

Certain retail businesses can afford to pay more for the use of land than others. Merchants are always in competition for stores in certain sections of a business district which are popularly known as "hundred per cent locations." Here, as a result of this intensive use of land and the strong competition of businesses for sites therein, develop the highest land values in the city.

Other property located beyond this section may serve the needs of another type of business better than land on the higher valued street, and be in just as keen competition for such uses which are less intensive and produce lower rents. So in business districts of cities exists a classification of land according to potential use and a subdistricting into higher or lower use zones. Each zone has its uniform characteristics and the various factors of value function to make particular sites within the limits of each zone more or less valuable than what might be termed the characteristic normal value.

Certain kinds of retail business can afford to pay higher rentals



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CHICAGO'S SMALLEST STORE

This quaint little store fronting on Grant Park at 28 North Michigan Avenue was built between the twenty-story People's Trust Building on the north and the ten-story Ward Building on the south. It seems that restrictions prevented these two properties being built on nearer than five feet to their lines. Finally the owners agreed to permit the erection of a small store, ten feet wide and 100 feet deep, which is rented to a florist at \$12,000 per year on a fifteen year lease. When the present lease expires a much higher rental probably will be charged. Entrance to the store is through the doorway to the building on the right.

than others because the turnover of stock is more rapid, and the profits greater, although the margin between cost and selling price may be less. Merchants dealing in women's apparel of different kinds can always afford to pay highest rentals. Women seldom allow the matter of price to interfere with their desire to own pretty gowns, hats, or shoes.

Main shopping districts of all cities are surprisingly alike in the character and location of the stores represented. In the very heart of the business section will be found the big department stores, catering largely to women's trade. More than three-fourths of the shoppers to be found in a department store are women, and often the percentage is considerably higher. Women, particularly, are attracted by skillfully decorated show windows and goods attractively displayed in cases and on counters bordering main aisles of a large store. They often drift into one of these stores to buy a spool of thread, or a bit of ribbon, and depart laden with several packages of merchandise.

Clustering closely around department stores are other large stores handling exclusive lines of women's clothing, suits, cloaks, and millinery. These establishments, known as "specialty shops," like to settle in locations near big department stores which are heavy advertisers. Five and ten cent stores are always eager to locate close to a large store doing a heavy volume of advertising. Such stores seldom advertise, but depend upon trade attracted to the locality by other establishments. They always seek locations where pedestrian traffic is heaviest. They cater to all classes, from the foreigner with a shawl about her head, who wants a couple of cheap dishes, or some candy, to the busy business man who remembers that his wife told him to bring home a fly swatter or a hammer. Five and ten cent stores depend upon volume of small sales, and large turnover of their goods. They do not even train their employees to sell merchandise. Goods sell themselves. All the clerks do is to wrap up the merchandise and ring up the sale on the cash register. They show big returns during the course of the year and can afford to pay large rentals.

Drug and cigar stores, often of the "chain" variety, pay fancy rentals for strategic corner locations where pedestrian traffic is heavy, and where large numbers of buyers can quickly and conveniently step in and make purchases. Drug stores are frequently advertisers, but the advertising done by cigar stores is relatively small.



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A BUSINESS "ISLAND"

At the intersection of Elston, Belmont and California Avenues, Chicago, this tiny building may be found occupied by a cigar and confectionery dealer. This triangular structure, 17 by 18 by 25 feet in size, is using an intersection which forms, probably, the smallest city block in the world. It indicates the intensive use to which land in large cities is being subjected.

Drug and cigar stores are keen rivals for small corner stores in prominent locations, and often pay, per square foot, very high rentals.

Men's shops usually assemble in a secondary location often on the sunny side of a street across from the women's stores. Their margin of profits are lower. Men are perverse as regards fashions, and will not pay exorbitant prices for apparel merely to be dressed according to the latest style. They have well defined notions as to what they want, and often buy the same kind of clothing, collars, shirts, hats, or shoes, year after year.

Merchants requiring large space for the display of goods, such as furniture and pianos, must necessarily seek cheaper locations where rentals in the aggregate for space used are not as expensive. These concerns may use great areas of rear or inside and upstairs space. High rentals existing in many cities are driving such stores farther out from the congested areas year by year, thus creating outposts of new shopping districts.

Banks are able to pay large rentals for space, and often monopolize choice street frontages, which would otherwise be given over to retail trade. It is significant, however, that in recent years in cities where banks are erecting new buildings on busy streets, stores are being placed on the street frontages, the main banking rooms occupying inside space. Examples are the Union Trust Company of Cleveland, and the First National Bank of Chicago. This is not so much for the revenue produced, though that is sizable, but because of the desire to foster high priced land values by a type of utilization which does not tend to detract from the general character of the district as a retail shopping center. In many cities the banking district is on a street by itself where row after row of imposing structures house the leading financial institutions.

About the edge of the high rent districts cluster the countless small shops to be found in every city. They shade off from the stores which can pay average rentals to those which must, for financial reasons, accept modest accommodations.

Retail values are usually highest on the main thoroughfare which runs directly from the highest grade business district to the highest grade residential section of a city. There may be parallel streets which have a good type of trade, but there is usually one main thoroughfare which enjoys the chief prestige and produces rentals on that reputation. There is located the city's "gold strip,"

where the highest retail rentals prevail. The outstanding street of this character is Fifth Avenue, New York. Boston has its Washington Street, Detroit its Woodward Avenue, San Francisco its Market Street, Chicago its State Street, Los Angeles its Seventh Street, Cleveland its Euclid Avenue, Toronto its Yonge Street and New Orleans its Canal Street.

An interesting series of changes may usually be noted on the main business street of a growing city. As trade advances from block to block high grade homes become rooming houses. One by



DEVELOPING A PRIVATE STREET

Walson Way is an interesting development in Philadelphia, where property extending from one street to another was improved in the manner shown. It is virtually a two-story open air arcade. The attractive way in which the land has been developed makes it an excellent revenue producer.

one these are replaced by one story business buildings, called "tax-payers." Then, as demand becomes insistent, new and large permanent business structures are substituted. In the course of a few years, the character of building and business occupancy in a city block may change several times.

Variations in value which occur between sites in business district zones are caused by advantageous features which one has over

another. Usually these features may be classified under the heads of usability and accessibility. A plot of land which is small in area is not as usable as a large one because of the limitations placed upon the character and size of buildings which may be erected upon it. A triangular tract or one irregular in shape bears much the same limitation. Area and shape are important factors influencing relative values of individual lots in business districts.

A property which is easily reached by pedestrians is most accessible and thereby bears a factor of value beyond one less favored. This accessibility may be afforded by proximity of transportation lines such as street cars passing the property, or nearness to a junction of car lines.

In attempting to value land in business districts it is necessary to ascertain what its rent producing capacity is. If a site is fully improved with a building which is adequate to the property and produces the highest possible return obtainable, then the net rent capitalized at the current rate of interest will produce the economic value of the land and building combined. From this must be deducted the value of the building and the balance may be attributable to the land.

Economic value does not allow for speculative futures and therefore frequently is either more or less than market value. If population in the particular city where the property is located is increasing and other factors indicate that enhancement in future earnings will be possible, then a price may be obtained which will be in excess of economic rent capitalized. On the other hand, if a city is not growing in population, business is static or on the decline and other factors seem to indicate a probable depression in future real estate values, then a value ascertained by capitalizing net rent may be in excess of market value, the price at which a willing buyer may be induced to acquire the property.

In downtown business districts a large proportion of the total land area, exclusive of streets and public places, is improved with commercial structures. These vary in character, such as hotels, theatres, office buildings, banking houses, store buildings, and churches. Upon less valuable land, near to the principal retail shopping section, are clustered buildings used as warehouses and for storage and light manufacturing and jobbing purposes.

Land, once improved with a building of more than a temporary character, is for a period of time at least committed to the uses that

accompany that type of building. Often the structure is inadequate to produce revenues commensurate with the possibilities of the site if another type building were located thereon. Sometimes the opposite is true and the building is in advance of the location by many years. Either situation will operate to influence the valuation of the particular site so improved. To illustrate, a lot located in the heart of the highest grade retail section may be improved with a one story frame "taxpayer" of a character utterly unfitted to house the class of business existing in the district. Second grade mer-



ONE WAY TO MAINTAIN PRIVATE PROPERTY RIGHTS

This curious picture was taken on the occasion of the annual closing of Astor Place, New York, which is open to public use every day but one during the year. On that one day it is closed, and a "No Trespassing" sign is erected, so that private property rights may be maintained on this strip of land, which adjoins the Waldorf Astoria Hotel, New York City. The space was recently leased as a bus terminal for many New York lines.

chants alone will occupy such space, unable to pay rentals commensurate with those obtainable in an adequately planned building next door. The result is a low gross revenue with a net which when capitalized will show a value entirely out of line with land values of adjacent parcels. As long as such a building is permitted to remain an appraiser must discount the land value because of the inadequate building, and the fact that an income analysis will fail to produce a result that can be used as a basis of valuation.

Frequently buildings are actual encumbrances upon land to such a degree that they should be wrecked and the land let for auto

parking or carried vacant. In this way, at least, taxes on the building can be saved. Such conditions may be found in downtown business districts of any large city and, where existing, operate not only to the detriment of the lot owner but adversely affects all nearby property. Enterprising owners will frequently wreck a substantial structure long before its physical usefulness is past to make way for a newer and more adequate improvement, thereby making possible greater rental yield and preserving the stability of a neighboring property.

In discussing the theory of land income as a basis of land values, it must be remembered that interest rates are always reflected in the selling price of land. The lower the rate of interest, the higher the selling price because future income will be discounted at a lower rate in estimating its present worth. Another way of expressing the same thought is that land values represent what is left after all other charges are paid. By way of illustration suppose a given property yields a gross return of \$10,000 per year. Taxes amount to \$2,500. Insurance, repairs, expense of maintenance and operation, depreciation and all other charges aggregate \$1,500 and the building upon the land being worth, let us say, \$25,000, deduct six per cent upon the investment in bricks and mortar which equals another \$1,500. These items total \$5,500 per year. The residue is \$4,500 per year which can be termed rent for the land alone on a net basis. Capitalize in order to ascertain land value and the results, at various rates, show the following:

On a 4 per cent basis	\$112,500
On a 5 per cent basis	90,000
On a 6 per cent basis	75,000
On a 7 per cent basis	64,286

There are many considerations which influence the accuracy of valuations determined by income. If a site is adequately improved and efficiently managed the rental obtained is almost an infallible guide to its full value unless the building is of unusual character constructed for a special purpose or happens to be a very costly dwelling house. In case of ordinary buildings erected for the purpose of earning revenue, the net rental after deducting taxes, expenses and interest upon the investment in the building, at its true worth and not on a cost basis, is a reasonably safe guide to use in arriving at a valuation of the land.

Ground rent may be defined as the residuum after deducting

from gross rents all operating charges, taxes, insurance, repairs, expenses of management and interest on the capital invested in the building. This is sometimes called economic rent. Ground rent is really the premium paid solely for location and rentals are based upon utility.

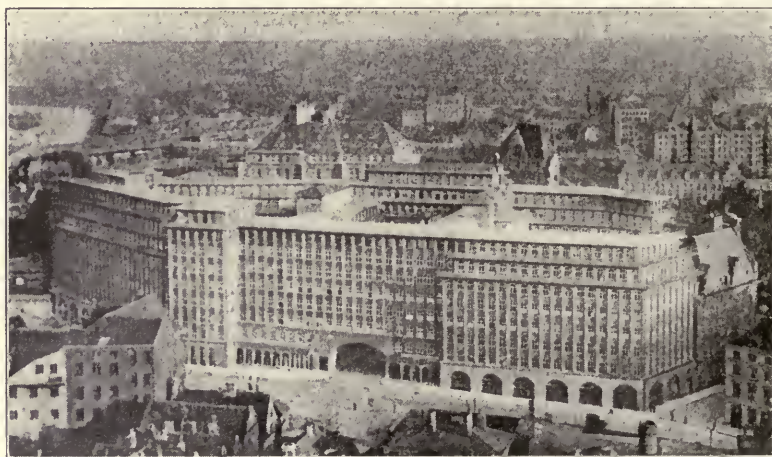
Capitalization rates vary with current securities and the prevailing interest rates for use of money. Before the Great War government bonds yielded a return of two per cent, railroad bonds and municipal and state obligations were sold to return from three to five per cent and industrial bonds six per cent. Since the economic upset due to the war, government securities range in return from three to five per cent and municipal bonds from four to six per cent. Industrial bonds have sold as high as eight per cent and real estate bonds on a basis of, from six to eight per cent. Some bonds, less secure in character, produce yields upon the market price in excess of eight per cent and many stocks yield from eight to twelve per cent. Interest rates have varied from three per cent in some communities to as high as eight per cent in others.

The capitalized value of real property rises and falls with the average interest rate of all classes of securities, subject always to the situation that makes certain kinds of real estate more or less desirable and which influences the capitalization rate accordingly.

Whereas in the later years of the nineteenth century it was common to capitalize real estate upon a basis of four per cent, twenty years later in urban centers the rate adopted was as high as six per cent. Perhaps a safe way of determining what rate should be used would be to adopt the prevailing rate paid as interest in the community for real estate loans over a period of years. In doing this, however, the loans should be selected on a basis of sound security so as not to subject the analysis to the influence of loans based upon speculative ventures.

A change of one per cent in the capitalization rate reflects itself in a surprising extent on the values thereby determined. For example a property with a net income of \$12,000 would sell on an eight per cent basis at \$150,000, on a six per cent basis at \$200,000 and on a four per cent basis at \$300,000. The lower the capitalization rate the greater will be the resulting effect on values. A fall of from four to three per cent adds $33\frac{1}{3}$ per cent to the value of the property, from five to four per cent, 25 per cent, while a fall from eight to seven per cent adds but fourteen per cent.

If society were in a static condition and progress and change did not occur, then the prevailing method of capitalizing rent to obtain land value would be accurate. However, conditions of city growth and the progress of civilization make it necessary to use other means of checking and ascertaining land values. While income return capitalized is an excellent guide to values it must not be considered infallible. Vacant land produces no income, yet it cannot be said to have no value. Often land located upon a city street is held vacant and unimproved by the owner who anticipates



GERMANY, TOO, GOES IN FOR LARGE BUILDINGS

The "Chilehaus" is a large eight-story commercial building in Berlin of massive and artistic construction of steel and concrete, the only wood construction used being in the windows and doors. It is so constructed that almost the entire building, consisting of large and small offices, has light. There are 2800 windows of uniform size; also a large arcade.

obtaining the unearned increment in land value with the growth of the city and the increasing importance of the street for commercial or residential purposes. This is a very common form of speculation. To obtain profit, however, land must increase in value more rapidly than its carrying charges.

Appraisal based solely upon income would produce very unequal results, lacking in uniformity. Consider two adjacent properties, of equal size and shape, as near alike as to land conditions as possible. On one is located a twelve story office building. On the other a six story department store building. Both structures are modern,

efficient and adequate according to their kind. The management of both properties is excellent. The office building produces a net income of \$60,000 a year after allowing all taxes and charges including interest at eight per cent upon the physical value of the building, thus showing a land value at six per cent of \$1,000,000.

The store is rented by the owner for ten years for \$120,000 a year, the tenant paying all taxes, keeping up repairs and carrying all charges for the operation of the building. The edifice itself has a sound reproductive value, less depreciation, of \$600,000 upon which an eight per cent return should be earned, or \$48,000 a year leaving a balance for land of \$72,000 which capitalized at six per cent produces a land value of \$1,200,000. The owner who has the office building thus seems to have land worth \$200,000 less than his neighbor next adjacent with a tract of equal dimensions and subject to like conditions. The type of improvement, the time when rentals are fixed, costs of operation of one over the other type of building and many other factors have caused the difference in the net returns obtained by each owner. So it can readily be seen that while income and rentals are an excellent check upon values, yet this method cannot be depended upon to accurately determine the value of land without the consideration of other factors such as sales, the general real estate market and the competition of one class of utility as against another.

In business property valuation some brokers and investors commonly use what is known as the "ten to one rule." This method is also based upon rentals and is figured upon the gross rental paid by the tenant. Store rooms that rent on a basis of \$1,000 per foot front are said to indicate a land value of about \$10,000 a foot front. Others use what is known as the "eight to one rule" which, when applied to a store paying \$1,000 a foot rental indicates a value of approximately \$8,000 a foot front.

Such methods cannot rise to the dignity of being considered anything more than rules of thumb, to be used only as a quick method of computing values for field work and subject to correction from more accurate analysis and surveys of the principal factors controlling land values.

With the advent of the federal income tax law in the United States a situation has been created whereby investments for income only will become more and more popular. Wealthy men are now seeking to make purchases of fees under long term leases with

fixed income determined by the rentals of the lease. Under such leases there is no chance for enhancement in value of the fee ownership by reason of increase in value of the land for the reason that the return is absolutely fixed. The only possibility of profit may come through a variation downward of interest rate so as to make an income of \$6,000 a year upon a \$100,000 fee investment, made when money was worth six per cent, sell for a sum in excess of the principal sum, for instance \$120,000 or upon a five per cent basis.

In certain sections of cities, where a full and complete utilization



A BIT OF SAN FRANCISCO'S CHINATOWN

Here appear two of the fantastic shop buildings facing Grant Street. Straight ahead is California Street. The street car is one of the few remaining underground cable cars in America.

has been made of land for commercial structures, values have become more stabilized and a condition of economic value dependent upon the actual net income produced by the properties has been reached. Courts have required land appraisers when valuing such properties for taxation to adopt income as the basis for valuation. In the case of *People v. Purdy*, a New York judge in considering the value of premises at 135 Broadway, New York, in a fully developed business district held that comparative sales under such circumstances

were not determinative of the value of the premises but that a more satisfactory method "is to take the property as a rent producer and see what attraction it would have to a purchaser for an investment of moneys to secure an annual return."

The practice of leasing land for ninety-nine years, now prevalent in many American cities, will also tend to force the consideration of net return as a determining factor in the valuation of fees covered by long term leases. Experts called upon to testify in condemnation of fees under long term leases are forced to value the interest of the fee owner according to the present value of rents capitalized at the current rate of interest. In this way the practice is gradually receiving the sanction of the courts. Ultimately valuation based on income may receive in this country far greater consideration in land appraisals than now accorded it.

In valuing business properties, the appraiser approaches his task much the same as appraising other real estate, except that he must ever be conscious of the greater sums of money involved and must use the utmost care in assembling his data upon which to predicate his opinion. His ultimate valuation is good or bad in proportion to his ability to exercise sound judgment in weighing the elements of value which exist in land and building.

Review

- 1—Where are highest land values found?
- 2—What is meant by "Peak land values"?
- 3—Do locations compete one with another for business tenants?
- 4—What is meant by a "one hundred percent location"?
- 5—Is there a variation in rent paying capacity between various types of retail businesses?
- 6—What types of business are able to pay peak rentals?
- 7—What is meant by a "taxpayer" building?
- 8—Explain "rent producing capacity" as a term applied to land in business districts.
- 9—What is speculative value?
- 10—Explain economic value in land.
- 11—Are variations in interest rates reflected in land values?
- 12—What is meant by "adequate improvement of land"?
- 13—Define ground rent.
- 14—Explain the capitalization process.
- 15—How do you determine upon a proper rate for capitalization of rent?
- 16—What is the "ten to one" rule?
- 17—May values of land in business districts of different cities be fairly compared? If so, explain how? If not, why not?



THE BUSH TERMINAL, BROOKLYN

The Bush Terminal, located on the Brooklyn side of New York Bay, is probably the most outstanding example of an industrial development of its kind in the world. In addition to a number of docks, where deep water vessels may load, there is a large development of warehouse and factory space.

CHAPTER 15.

REAL ESTATE USED FOR INDUSTRIAL PURPOSES

Industry requires large areas in which to function—Elements of successful operation—Single industry cities—Local or regional advantages of cities—Railroad trackage important—Influence of natural resources—The value of land for industrial purposes—No set rules available.

Manufacturing enterprises require large areas of building space, well lighted, readily accessible to railroads and within easy walking or riding distance of residential districts of a character to house workmen and their families at moderate cost. Since industries require sizable areas in order to carry on processes of manufacture, it is necessary that land occupied should be relatively low priced, in order to reduce manufacturing costs to a minimum to meet competition. Where land is sufficiently cheap, factories are constructed to occupy ground floor space rather than buildings several stories in height.

Most heavy manufacturing, such as carried on in foundries, steel mills, bridge works, car shops, and machine shops, requires ground floor space and large areas must be acquired in order to accommodate such businesses. Heavy and ponderous machinery and furnaces must be located upon substantial foundations. Because of the size of the products manufactured much space is necessary for the storage of materials used by such a plant. These industries cannot occupy high priced land, on account of the prohibitive cost.

Light manufacturing can be carried on successfully with less ground floor area, and, therefore, many such enterprises occupy buildings of several stories, covering relatively little ground area. Such industries do not usually require large and heavy machinery, articles are stored in smaller space and the materials required are usually not so bulky. Therefore, higher valued land may be utilized profitably if in the particular case it has commensurate advantages of good labor supply and transportation facilities.

Successful manufacturing, in addition to competent management, involves:

- 1—Economic assembling of materials.
- 2—Available labor supply.
- 3—Power facilities at reasonable cost.

4—An adequate supply of capital and credit.

5—Cheap land in large quantities with fairly level contour and advantageous soil conditions, located near good water supply.

6—Good transportation facilities for the receipt of raw materials and the shipping of finished products.

Cities able to furnish advantages over other communities in the requirements of industries naturally develop as industrial centers in proportion to the number and extent of the favorable facilities furnished.

As a general rule, the more advantages a city possesses of those outlined above, the greater will be its chance for growth along industrial lines, other things being equal.

Some cities, it is true, have become prominent as centers for certain industries, although deficient in certain of the facilities usually desired. Tradition or the fact of an early start in some particular industry which has trained workmen has contributed to the importance of many cities otherwise lacking natural advantages which would normally control the location of industries. Examples of such cities are Akron, with its rubber industry developed because of an early start, and Grand Rapids, with its furniture factories, originally well located with reference to lumber supply, but now retaining its prominence because of tradition, its early start and its volume of specialized labor.

Mere accident has occasionally been responsible for the localizing of some industries. Lynn, Mass., and several nearby towns became important shoe manufacturing centers because a Welshman named Dagys, a skillful shoemaker in early Colonial days, took up his abode there upon arriving in America. His business grew beyond the one man stage, and the great shoe industry, which spread later to surrounding towns, had its inception.

There is a well defined tendency to locate new industries outside of the corporate limits of cities because of cheaper land and lower taxes. Occasionally factories seek plant sites in adjacent and neighboring towns sufficiently close to a large city to have the advantage of labor supply and the distribution facilities afforded by the city, and still be able to enjoy cheap land and low taxes. Better housing for workmen at less cost is an added advantage of the nearby town which often influences manufacturers to seek it as a plant site.

Occasionally the competition of shops located in a large city will spell disaster to an industry located in the smaller town. In cer-

tain industries the class of workmen employed seem to prefer life in a city to living in a smaller town. When this is true, it is difficult to induce workers, during normal times, to leave the city with its intensive life, replete with amusements, moving picture shows, and fascinating noise and bustle. The element of available labor supply in ample quantity is quite as important as cheap land, and must be carefully considered by the plant manager.

Sometimes cities have local or regional advantages which outweigh their deficiencies and cause the location of great industries. Pittsburgh became a great steel center in spite of high hills and adverse topographical conditions. The San Francisco district is poorly located with reference to rail transportation facilities, but has become important industrially because of its location on the Pacific Coast midway between this country's national boundaries.

Huge factories employing thousands of men have caused Detroit to rise in population from 285,704 in 1900 to an estimated population of 1,430,000 in 1927. The Ford Motor Co. alone employs over 115,000 Detroit workmen in its factories, and other Detroit automobile industries contribute many thousands to the city's population.

Sites for industrial enterprises are selected with reference to location and area. In locating a factory consideration must be given to topographical conditions, railroad facilities, available labor supply and requirements of the particular enterprise as to area.

The site should be easily accessible to the particular kind of labor used in the industry. It would be foolish to select as a site for a steel mill, acreage adjacent to a high grade residential district. Executives might be accommodated, but the laborers necessary to the industry would not be available. Therefore, the location should be as close as possible to the district in which are located the homes of the type of workingmen who will be employed in a particular industry.

Surveys made by factory managers indicate that an average workman seeks employment within not more than thirty to forty minutes travel from his home. The time consumed in going greater distances is a natural deterrent and causes the worker to seek employment closer to his home. He prefers to walk to work when possible to do so within fifteen to twenty minutes so as to reduce his expense. It is true, however, that today many workmen are driving motor cars long distances to their shops, and many large plants now provide parking space for employees' machines.

Land of level contour is best adaptable for factory sites, although foundries and steel mills often select locations near gullies and ravines in order to obtain dumping space for slag and other refuse. Low lands are frequently selected where rail facilities for shipping are available. Many enterprising plant managers are selecting locations on land lower in level than the abutting railroad tracks, so as to provide switching facilities with gravity dumping delivery systems for fuel and bulky raw materials such as lumber, sand and other building supplies. Such locations, however, are not always advantageous to a manufacturing plant that ships its finished product by rail, for loading is sometimes difficult.

Railroad trackage is important to most large industries. Therefore, locations affording switching facilities are most desired. It is not necessary that the switch parallel the main tracks for a greater distance than enough to afford proper spur connection. From fifty to one hundred and fifty feet is usually sufficient to provide a spur connection, the switch proper running within the plant yard. Where more than one railroad serves the city, a choice is afforded to the manufacturer in selecting his rail location. Industries requiring large supplies of coal, iron ore or bulky materials locate along railroads tapping districts where such supplies are obtainable. Where shipping facilities are primarily important, the location adjacent to the railroad having direct lines to principal markets is most desirable. In many large cities "belt lines" have been constructed, connecting all rail systems so that plants located upon any rail frontage have the benefit of direct local connection with all other roads.

Industries not requiring rail facilities have greater freedom of choice in selecting plant sites. Where the article manufactured is marketed in the immediate locality motor trucks are depended upon to provide delivery service. Likewise where the products are shipped in small packages and in less than car load lots, trucks are used for transporting goods to shipping stations of railroads, electric lines and steamships.

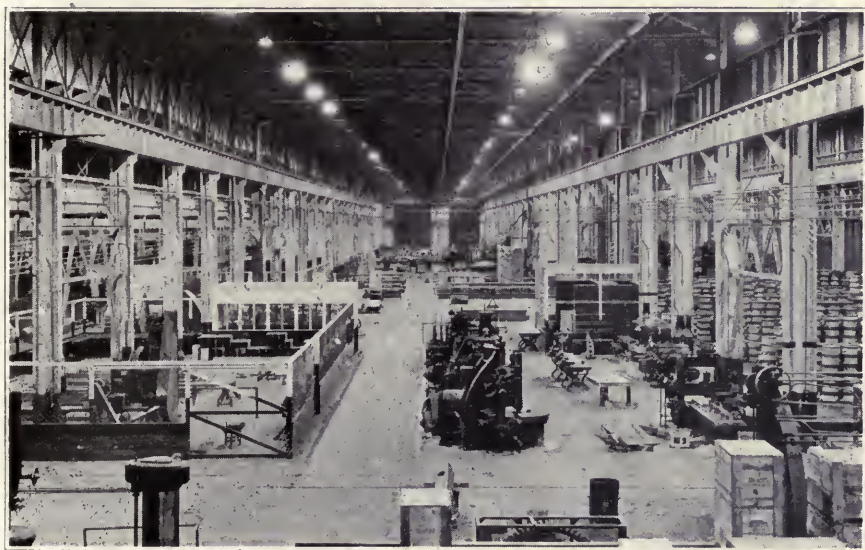
In ocean and lake cities industries requiring large supplies of raw materials such as ore, coal and sand find it profitable to seek water frontage with dock facilities so that shipments may be received by water at rates lower than charged for rail transportation.

Natural resources influence the location of some industries. A good water supply is necessary to the rubber industry. Natural gas, where found, can be used for fuel in certain classes of manufactur-

ing. Extractive industries usually seek locations closest to the source of supply of raw materials, and are drawn to cities having such advantages to the particular industry.

Factories must be situated close to local street car lines, or paved roads suitable for automobiles, so as to afford workers transportation to their homes. Pavements on streets leading to and abutting upon a plant site add value to its location, and afford easier access for motor vehicles.

In the consideration of area requirements, the size of a tract is



PALACE OR FACTORY?

Medieval kings lived in dark, dingy "hovels" when compared to the bright, sanitary, and attractive "palaces" which some factory workers enjoy today. This is the interior of a factory unit of the General Electric Co.'s plant at Erie, Pa. Manufactures have found that it pays to furnish light airy rooms for workers, with plenty of artificial illumination when necessary, and that production is increased thereby.

important. Unless the site is of such area as to provide room for expansion, it receives small attention from the far-seeing manufacturer. Usually industries prefer sites rectangular in shape, although irregular parcels may be excellent for particular purposes. A property may be so shaped that the installation of a switch divides it in such manner as to prevent the construction of an efficient plant.

Street frontage affords advantages of light and air, and provides good advertising space, but may increase taxes.

In many of the larger cities, such as New York, Chicago, Los Angeles and Detroit, great buildings have been constructed and dedicated to the use of small manufacturing concerns requiring little space. These are known as power blocks. Such buildings are equipped with shafting, and other manufacturing necessities ready to attach to motors and machines. Elevator service is provided and also trackage facilities for loading cars for rail shipments. These are actually industrial tenements.

Industrial lands are usually valued upon either a square foot or an acreage basis, according to size and land value. Where land is worth less than \$5,000 an acre, the acreage basis is preferred. When over such a value, a square foot unit is generally adopted.

In many cities an attempt is made to value factory land on a basis of units fixed for adjacent property not used for industrial purposes. Where a large factory is surrounded by workers' homes, it is manifestly unfair to apply the same methods of fixing values to such dissimilar uses. Residential property usually is valued on the front foot method, industrial sites by the area rule. Area is important to factories, frontage to residential and business uses. No attempt should be made to seek uniformity in valuation between industrial lands and properties adjoining not industrial in character.

Pedestrian traffic detracts from the value of lands devoted to industrial uses, whereas retail business districts are benefited thereby. Loading, and unloading, of materials is hindered by many pedestrians or heavy vehicular traffic. Therefore, frontage upon a street is of comparatively small moment to a factory. Depth adds greater relative value to a location than street frontage. Alleys are important since they afford additional driveways and areas for loading operations.

It is not the purpose here to discuss in detail the appraisal of industrial properties. Elements which are important to the location of manufacturing enterprises have been outlined and briefly discussed. The absence or presence of these factors determines the relative values of different sites for industrial use. This applies not alone to land within the boundaries of a city, but also in the economic competition of communities with one another, although many miles may separate them.

Industrial districts and communities are composed of manufac-

turing units, which either manufacture, or handle, similar or kindred articles; or which have similar requirements, such as the same type of labor, shipping facilities, like raw materials, similar topographical land features, or water supply of a certain quality or quantity. One district may be more valuable than another, according to the type of industry that each best serves. The most valuable industrial site is the one which is best suited to that industry which can best afford to pay the most for the land or to which the matter of location is most important.

To discover the value of land for any certain industrial use, it is necessary to carefully weigh the various factors which may contribute to or detract from the successful operation of the particular enterprise in a given location. One industry may find a location ideal for its purposes, and the site for that use may have a high value. Another industry would operate under handicaps if placed on the same land, and to that business the site value would be discounted by the aggregate money value of the various disadvantages. No set rule can be used in the valuation of property for industrial uses. This applies not alone for land, but for buildings as well. A fine brick structure designed for the manufacture of automobiles might be worth very little for foundry purposes. The building itself may be adaptable for another use, but the floor layout may be entirely wrong. The plottage and shape of a particular lot may be ideal for one use and utterly impossible for another.

While, fundamentally, a property value may be the sum of land value plus improvements, yet when industrial properties are considered, so many modifications of this principle must be made that the rule scarcely applies. Cost of land, plus reproduction cost of buildings, would give a physical value, but this rarely coincides with sale value. Buildings may be old and inadequate and thus depreciation and obsolescence must be reckoned with. Real estate market conditions may stimulate or depress prices. These influences which vary sale value from cost or reproduction value apply more to industrial units than in any other class of real property. Add conditions which are peculiar to the marketing of manufacturing properties, where standardization of buildings is almost impossible because of special conditions surrounding the manufacturing processes of each industry, and it is readily apparent that each case must be particularly considered with reference to the value of the property for the use to which it is put or contemplated.

It is interesting to note that the last few years have seen a distinct shifting in industry in the United States. Decentralization has also been observed in the creation of branch plants in southern and western states far removed from parent factories, in an endeavor to cover the national market without having to pay steadily advancing freight tolls. The past decade has seen many textile plants in New England removing to southern states where they may be nearer the source of raw materials, and, incidentally, be relieved from the domination of labor unions which are said to have waxed strong in the larger and older industrial centers. Cheap electric power now avail-



**NOT A LIBRARY, BUT A SLAUGHTER HOUSE
HEADQUARTERS!**

Of all the businesses which have been neglected, from an artistic standpoint at least, is that of the stockyards. Yet art can be used here, as evidenced in the beautiful structure above, which is the main headquarters building of the Los Angeles Stockyards Co.

able in several of the southern states has further aided in this movement.

Large industrial growths have occurred recently in the cities of Los Angeles and Oakland, California. Many new industries have been launched in each city to care for the needs of the populations living west of the Rocky Mountains. Eastern factories have established branch plants, and distributing houses in these and other cities on the Pacific Coast to obviate paying high freight rates from far distant factories in eastern states. An abundance of cheap electric power from hydraulic sources is available in all of the Pacific sea-

board states, and with important markets close at hand it seems only natural that many industrial enterprises will continue to locate in these sections. Indeed, a movement is on foot on the Pacific coast to engage in the silk industry on a large scale. At present raw silk is imported from Asia, shipped to America, transported on railroads over 2,500 miles across the continent, manufactured into wearing apparel, and shipped back to the Pacific Coast for retail sale. Over 5,000 miles in freighting would be saved for consumers on the Pacific Coast were factories there to intercept raw silk and prepare it for the western coast market upon its arrival by steamer from the Orient.

City builders fully appreciate the importance and relation of industrial development to the growth of cities. A city that possesses a diversity of manufacturing enterprises enjoys better opportunity for a well balanced growth than a one type industry town. Industrial conditions depressing one line of endeavor are less likely to affect the progress of the city where the types of manufacturing enterprise are many and varied.

To properly balance city growth, industrial areas should be planned by city builders along railroads and paved highways in various parts of the city, thus affording a proper distribution of industries and enabling workers to find employment near their homes. Such a distribution of industries prevents street congestion and contributes to the uniform growth of a city.

Review

- 1—Why do manufacturing enterprises require large areas of land?
- 2—What conditions apply to light manufacturing enterprises?
- 3—Name six elements involved in successful manufacturing.
- 4—Why have some cities prospered as one industry centers?
- 5—Do small towns and districts adjoining large cities offer advantages to industries?
- 6—What two conditions control the selection of industrial sites?
- 7—Why is level land usually best adaptable for factory use?
- 8—Of what importance are railroads to industry?
- 9—Why do industries not requiring rail facilities have greater freedom in the selection of sites?

10—What types of industry use water front facilities most extensively?

11—How do natural resources influence the location of some industries?

12—Is transportation important where factory locations are concerned? Why?

13—Why should factory sites provide room for expansion?

14—Explain why and how power blocks operate.

15—Why are factory sites usually valued on a square foot basis?

16—Of what value is pedestrian traffic to industrial lands?

17—Why is it difficult to arrive at the value of specific factory sites?

18—Why is it that no set rule may be used for such purpose?

19—Explain how industry is shifting to western and southern states, and why.

20—Of what importance is industry and its development when the growth of a city is considered?

CHAPTER 16.

FACTORS OF VALUE IN RESIDENTIAL PROPERTIES

A city must have a variety of accommodations in the way of home sites—Restrictions advantageous to residential property—Elements which add value to such tracts—Influences which detract from value—Valuation processes defined and applied.

Half a century ago little attention was paid by subdividers to the individual demands of each class of prospective home owners, and subdivisions were laid out in a more or less haphazard manner. Sizes of lots varied in different properties placed upon the market, and many subdivisions had no building restrictions whatever to control the development of the area. Streets were laid out without reference to connections with those in adjoining subdivisions, plats were poorly planned, and the method of marketing homes on the small down payment basis was but little observed.

Much has been learned about building residential sections through experience of operators in real estate in recent years. It has been learned, for instance, that proper restrictions and careful supervision of the development of a subdivision is good business practice for operator and home builder alike, and contributes value to the entire section for residential use. The more rigid the restrictions the better the class of buyer attracted and the higher the price that can be obtained for each individual lot. Likewise in building a home it costs just as much to erect a house on a cheap lot as on one which costs more, but is better suited to the type of dwelling being constructed.

Residential sections are as distinct from business districts as are manufacturing areas when values and methods of valuation are concerned. What is desirable for the location of residences would be distinctly disadvantageous for the business of a merchant. Most persons seek homes in districts where nature affords some elements of natural beauty, or in areas which subdividers have laid out artistically. Ravines, brooks, lakes, trees, often hilly land, attract the home seeker. Business turns aside from or destroys such natural beauty spots, seeking level lands on which to build.

Residential property is attractive and valuable because of the presence or absence of certain desirable or undesirable features.

There are many classes of property, ranging from the highest to the lowest type of occupancy. Single residences are placed in the best location, although apartments which indicate an intensive residential for, and earn profits upon, land in choice residential districts, if such use of land, not individual in character, are able to pay higher prices use is permitted. In larger cities, where zoning is becoming quite



NO MORE DODGING BOULEVARD TRAFFIC HERE

Dense streams of automobiles often prevented pedestrians from crossing the boulevard in Edgewater Park, Cleveland, for many minutes at a time. The city solved the problem by building this subway for pedestrians only.

general, apartments and double houses are required to locate in districts assigned for such purposes. The presence of multiple dwellings, such as flats, terraces, apartments and double houses, destroy much of the privacy and beauty of a single family residential area, and decrease the desirability of a section for high class home development.

Among the desirable features of residential neighborhoods are:

1. Reputation as a high class and fashionable location

for fine homes, where prominent citizens reside. High prices will be paid for homes or building sites in a neighborhood considered fashionable.

2. Effective building restrictions, such as set back lines for houses, restrictions limiting construction to single family dwellings of a minimum cost.

3. The absence of nuisances, such as railroads, factories, stores, and similar uses, which are out of harmony with the character of the district, and which are considered distasteful to those who wish to live in a high class neighborhood.

4. Sites having moderate elevation, affording good drainage at all seasons of the year, and often furnishing attractive views from front windows and porches. Hilly sections about cities, which roll back to plateaus, develop into more or less exclusive residential sections, and attract the attention of the experienced subdivider. Adequate transportation service must ordinarily be provided, although in these days of the automobile it sometimes happens that districts of this class develop without car service. It has been found, however, that it is difficult to retain domestics for housework in districts where public transit facilities are limited.

5. Areas near lakes, rivers, or golf courses usually are desirable for residential use, if they have been properly restricted. The fine homes about the attractive lakes in Minneapolis are examples. Riverside Drive, New York, is an example of a district where the wealthy classes reside, and pay high rentals for apartments overlooking the Hudson River.

6. Good transportation facilities always prove of benefit to a residential area, and assist in creating and maintaining values. Long tiresome walks to street cars many blocks away soon discourage a home owner, and often compel him to move to another section of the city, where better service is afforded. In the higher grade sections of a city, the car fare charged has ordinarily little to do with the desirability of home sites, provided comfortable and adequate service is furnished.

7. The presence of all forms of public service has much to do with the desirability of a district, and reflects itself in prices obtained for homesites. Water, pavements, sanitary sewers, and electricity are, of course, imperative requirements of a middle or high grade neighborhood. Gas, whether artificial or natural, is also desirable. Many a neighborhood which lacks gas for cooking is banned by discriminating home seekers.

8. Reasonable proximity to schools and shopping cen-

ters, where neighborhood buying may be done, is also desirable. If the children of the family have to walk long distances in inclement weather, it causes the parents to move to a neighborhood where schools are more conveniently located. If household supplies run low, and it is necessary to walk ten or fifteen blocks to get a loaf of bread, the decision to get nearer to places which vend the necessities of life may result. The distance from churches is also an element which attracts certain persons to a given district.



TREES PLACED INSIDE OF SIDEWALK

These streets are of exactly the same width, but due to the manner in which the trees have been planted they appear different. In order to give spaciousness and afford better street lighting facilities at night, it is recommended by one authority that trees be planted inside of sidewalk lines.

There are certain elements which have a detrimental influence on the desirability and value of residential areas. Among these may be noted:

1. The presence of factories in a neighborhood. This is found frequently in the older portions of a city where business has pressed out from a small beginning, until a considerable area is being used for manufacturing purposes, driving out home owners. Nothing detracts from a high grade residential property so much as a factory built nearby. Immediately there begins an exodus of those who resent the

intrusion, and who are able to buy elsewhere. Land values depreciate for a time until the value of the houses is absorbed, after which the ground may increase in value for business use.

2. Tenements and apartment houses, creeping into fine residential streets, where expensive detached homes have been built, soon cause a diminution in value. Many of the fine old neighborhoods in the larger cities, located near main arteries, gradually change from residential to apartment



TREES PLACED BETWEEN CURB AND SIDEWALK

house development. Building values in homes are destroyed, but land eventually increases in value because of its new semi-business use. The apartment house, using land intensively, is able to earn profits on higher values than the home owner can afford to pay.

3. Noisy street traffic is an element which is distinctly undesirable in a residential district. Most cities have ordinances prohibiting street crying by hawkers of vegetables and other commodities, but it is difficult to prevent the tooting of auto horns, the grinding of brakes, or the rumbling of fast moving trucks. Street cars upon a street devoted to fine homes detract from its desirability for residential use,

and, unless in a restricted home area, quickly force the property fronting upon the street into business use.

4. Attractive residential streets have been ruined by the building of a store, garage or other business structure in close proximity to homes. Such uses are out of harmony with the character of a residential section.

5. Marshy and wet land detracts from the desirability and value of residential land for obvious reasons.

6. Unsightly approaches to a neighborhood which otherwise has many attractions have a definite effect on its desirability and value. In many cities it is necessary to pass through a manufacturing district before reaching a home section. This is offensive to many people who prefer living where they can go from the business district to their homes without having to pass rows of ugly factories or unkempt business places.

7. The limited size of an area planned for high class residential use sometimes prevents its success because of the fear of the prospective home dweller that proximity to districts unrestricted will cause decrease in land values when business usurps adjoining areas.

8. Poorly paved streets, and rough, uneven sidewalks, will sometimes condemn an otherwise attractive neighborhood.

Corner lots are not considered desirable for residential purposes. Retail stores desire frontage upon intersecting streets because of greater traffic, additional frontage for display space, and light and air. Corners to home owners mean only added taxes and more care. Most tax appraisers recognize this distinction, and give corners in residential districts no added value over inside lots.

Lots in subdivisions for residential purposes vary greatly in size, depth, shape, topography and surface conditions. In most cities forty to sixty feet is now considered a proper minimum width for a lot on which a single house may be erected, although many subdividers plat larger lots. In years long since past, homes were built upon lots as narrow as twenty feet, buildings occupying lots out to the sidewalk lines. Such lots were of sufficient depth to provide for a yard or court in the rear, where cultivation of flowers and vegetables was frequently undertaken. Baltimore, Philadelphia and Cincinnati have many such old houses, either single or in rows.

There is no standard depth which has been adopted for residential lots. Today lots are seldom less than 100 feet in depth, ranging to as high as 300 feet deep. A desirable size is one foot of

frontage to each three feet of depth. Lots fifty by one hundred and fifty feet in size fulfill this requirement.

Street layouts made in recent years are irregular in higher grade residential areas. Such street lines make lots slightly irregular in shape and plottage. Though sometimes difficult to develop, owners usually consider such irregular tracts more desirable when



(C) Underwood & Underwood

CURIOUS UTILIZATION OF A RIVER BANK

Here is shown a strange looking dwelling overlooking the Hudson River in New York City. The steep bank is utilized by the use of steel pillars on which a house is perched. By no other means could this site be used.

the size is sufficient to permit the erection of a house containing a floor area of not less than twelve hundred square feet.

Appraisers value residential lots usually by the front foot method, giving little or no additional value for corners and depth greater than one hundred and twenty feet. Restrictions upon use definitely

add worth to lots in subdivisions, and have great influence in determining the value of the lot to a home builder.

Prices paid for residential lots in cities range from \$10 a foot front in the rough ungraded, unpaved and unimproved subdivisions, to as high as \$500 or \$1000 a foot front for desirable locations in fashionable neighborhoods. In most cities the cost of installing ordinary public improvements such as water, gas, sewer, and pavement, cost from \$15 to \$25 per lineal foot, which cost, of course, must be added to the value of the raw land, together with the expense of selling and the profit of the subdivider.

Alleys in residential neighborhoods, while affording access to the rear of lots, are not favored by high grade subdividers who claim it is a useless waste of land and simply furnishes a place which may become cluttered with ash cans and rubbish. The practice is also general in the newer and better class subdivisions of permitting only low wire fences or attractive hedges in the place of high board fences, such as were common a generation or two ago. In many developments, it is stipulated that garages must be attached to dwellings, and no outhouses of any kind are allowed. This makes for the development of attractive rear yards, which are later improved with flower gardens or lawns.

In medium priced subdivisions, it is a recognized rule that houses should cost from three to four times the value of the lot, when of normal size. In sections where very high grade homes are erected, the ratio is often greater. There is a tendency now to surround fine large homes with much larger areas of land than was the practice a few years ago.

Determining the value of a house located upon a lot is usually not merely an assembling of data as to cost of materials, labor and equipment. True, this method will produce what might be termed a reproduction cost value and is interesting information to have as a check of building value. The completed structure, however, has a value apart from its cost of construction, and may be more or less than actual cost. A house may be so attractive and convenient in arrangement of rooms and equipment that a price in excess of its ordinary cost may be obtainable. On the other hand, poor architectural lines, a hideous color scheme, an inconvenient floor plan, or inferior plumbing or heating equipment may so condemn a residential structure as to make its sale almost impossible.

Frequently a house is built upon a lot too small to properly

accommodate its architectural style. Some lots may seem to be too large for the small dwelling located thereon. Both of these conditions operate to detract from the value of the entire property and create greater sales resistance. Marketability must always be considered in valuing residential properties. Mere brick and mortar cost is not always a criterion of value here. The same observation applies to appraisals based solely upon income possibilities of a residence. A single house seldom rents for sufficient to yield the owner an adequate return on his investment unless the period taken is one in which building costs are low and rentals are high, an almost inconceivable coincidence.

Individual family dwellings are usually appraised by comparison with other properties. Facts must be assembled concerning recent sales in the vicinity. Each transfer should be compared with the property upon which a valuation is to be placed. In this way comparative advantages or disadvantages of various properties may be carefully weighed and applying price information gleaned from other sales or compared properties, a valuation may thus be obtained.

The careful appraiser of residential property will study the character of the section in which a house is located with reference to its desirability as a home section, then consider neighboring properties to ascertain whether or not their proximity lends to or detracts in value. Deed restrictions, if present, must be studied; street layout investigated; the presence or absence of schools, churches and a shopping district near the neighborhood must be considered and the character and type of those occupying dwellings in the district must be observed.

Having completed such a study the lot is next studied with reference to size, shape, topography and landscaping. Ordinarily, lots regular in shape are best adapted to building operations and command higher prices than those of irregular plottage. Sufficient level land must be available for the house and its immediate surroundings although some most attractive home sites are uneven in contour. Plots with a stand of fine forest trees are eagerly sought after and, therefore, are considered more valuable than treeless tracts.

In analyzing a house, design is paramount. Darkness, wasted space, poor arrangement and obsolete layout all operate to discount value. Convenience to the housewife is a factor of value that is quickly recognized in the market. Standard equipment which will contribute thereto may lend value in excess of its actual cost. Archi-

tectural treatment is always important and must be carefully studied to determine whether the building is attractive or repellant to the buyer.

Structural analysis will give consideration to the kind and quality of materials used in construction. Brick houses are considered somewhat more valuable than those built of wood, and stone houses are sometimes more costly than brick. The adequacy and permanency of the heating plant, the electrical and plumbing equipment, its mod-



YES, IT'S THE CORNER GROCERY!

The problem of fitting a business section into a high grade residential park has been successfully solved in Roland Park, Baltimore, where the business structure pictured above, containing a number of small shops cares for the business needs of a relatively large neighborhood.

ernity and efficiency will also demand attention. The condition of the structure as to repair, and deterioration influences the appraiser's judgment.

Style in houses varies with different periods, localities and cities. In some places the detached single dwelling is favored. Other communities are built up with multiple dwellings of the terrace and flat type. Some cities favor a front veranda overlooking a spacious

front lawn between house and sidewalk. Other houses are built almost flush with the inner sidewalk line, all yard space being confined to the rear. This element of type is important to the valuer, for a misplaced residence that is out of harmony with the ideas of residential construction of a district may have to be sacrificed at a price less than structural value.

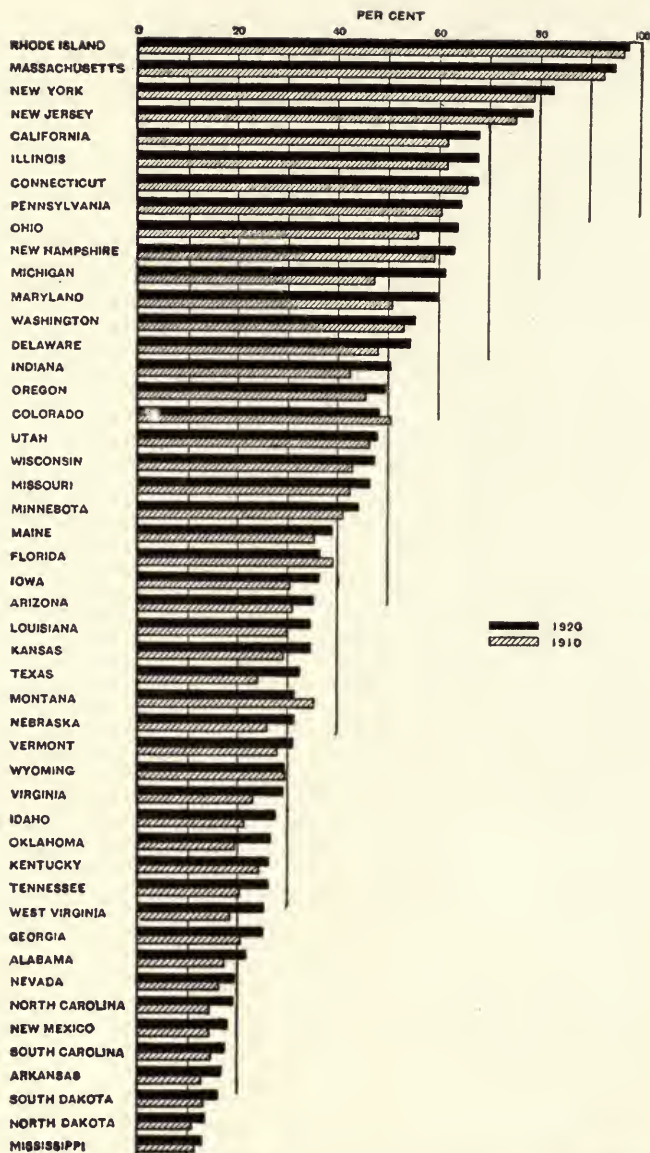
The valuation of residential properties depends so much upon the ability of the appraiser to correctly balance various elements of value that it is manifestly impossible to establish definite rules which may be applied with certainty.

In final analysis the valuation of residential property is a process of attempting to determine what a property will readily bring if offered for sale. Fad and fancy operate here to influence the buyer almost as much as in the merchandising of women's wearing apparel, for women, for the most part, have the final decision in home buying.

A city poorly provided with attractive and conveniently located districts for the homes of its inhabitants is seriously handicapped. Good homes for citizens of all classes always benefit a community, affording comfort, health and happiness to its residents.

Review

- 1—How do residential districts of today differ from those of fifty years ago?
- 2—Are deed restrictions of value in a residential area?
- 3—Name some natural features which contribute to the desirability of land for residential district use.
- 4—What is the effect on land value of associating together single houses and multiple dwellings?
- 5—Name five desirable features for residential districts.
- 6—Give three detrimental influences upon residential neighborhoods.
- 7—Are corner lots considered desirable for homes?
- 8—What is considered a minimum depth for a home site?
- 9—How do appraisers value residential lots? By what method?
- 10—What range in prices prevails in residential lots?
- 11—Are alleys considered desirable in residential areas?
- 12—How are houses appraised?
- 13—Has lot size any relation to architectural style in houses?
- 14—Does neighborhood character and style affect value of land in residential areas?



URBAN POPULATION IN THE UNITED STATES

This diagram, issued by the United States Census Bureau, indicates the per cent urban of the total population by states for 1920, as compared to 1910. It will be noted that nearly every state in the Union increased its urban population within the time indicated.

CHAPTER 17.

THE NEW URBAN ERA AND REAL ESTATE VALUES

The United States now an urban nation—Frontier days of colonization have passed—Development of new forms of transportation—Growth of population—Intensive use of land incident to increased density of population—Modern characteristics in urban land use.

Some time during the decade ending with 1920 the United States became a nation wherein most of its inhabitants lived in urban communities. This situation was forecast long before the time of actuality so that American people were scarcely surprised upon awakening to read the announcements of the fact by the Federal census bureau. This transition from a rural nation to one predominantly urban has been accompanied by many notable tendencies in the development of cities. Real estate therein has been greatly affected by changes in economic and social conditions of the urban districts.

The frontier days of the colonization era in America have passed into history, but pioneering today still persists in a different fashion with steel skyscrapers climbing higher and higher, transportation assuming new forms in motor vehicle and airplane, concentration of businesses in downtown districts and decentralization of residential districts accomplishing suburbanization to an extent heretofore unknown.

Foreign immigration, which has been an important source of population increase in the United States since its beginning, has since 1925 dropped substantially, due to restrictive laws. Large cities although evidencing growth, are not keeping pace in proportionate increase with small and middle size cities. Migration from rural to urban districts has been very marked with the increasing attractions and comforts afforded by city life. Industry has concentrated rapidly into the metropolitan areas where labor supply is more abundant and the assembling of raw materials and the distribution of finished products better and more economically accomplished.

In new countries where colonization is occurring, and until such time as virgin areas have been settled, land is used extensively. Cultivation of agricultural districts is carried on with little regard to ob-

taining the fullest yield possible from each acre under the plow, but as population density increases, intensive use of land both rural and urban becomes an economic necessity. The United States, as a nation, has entered this stage of development and nowhere is this more marked than in its cities.

Suburbanization, a decentralizing force in urban life, is pushing out over widening areas the geographical boundaries of cities, while the demand for land in central districts upon which to erect buildings to house a multitude of businesses is creating a competition for favorably located space is producing abnormally high land values. Cities are not only increasing in population but expanding in area in a manner which has made necessary the planning for future metropolitan use of vast regions of border farm lands surrounding larger cities. As a result of this expansion process, the use of land for urban purposes will probably increase in the next twenty-five years proportionately greater than urban population will increase.

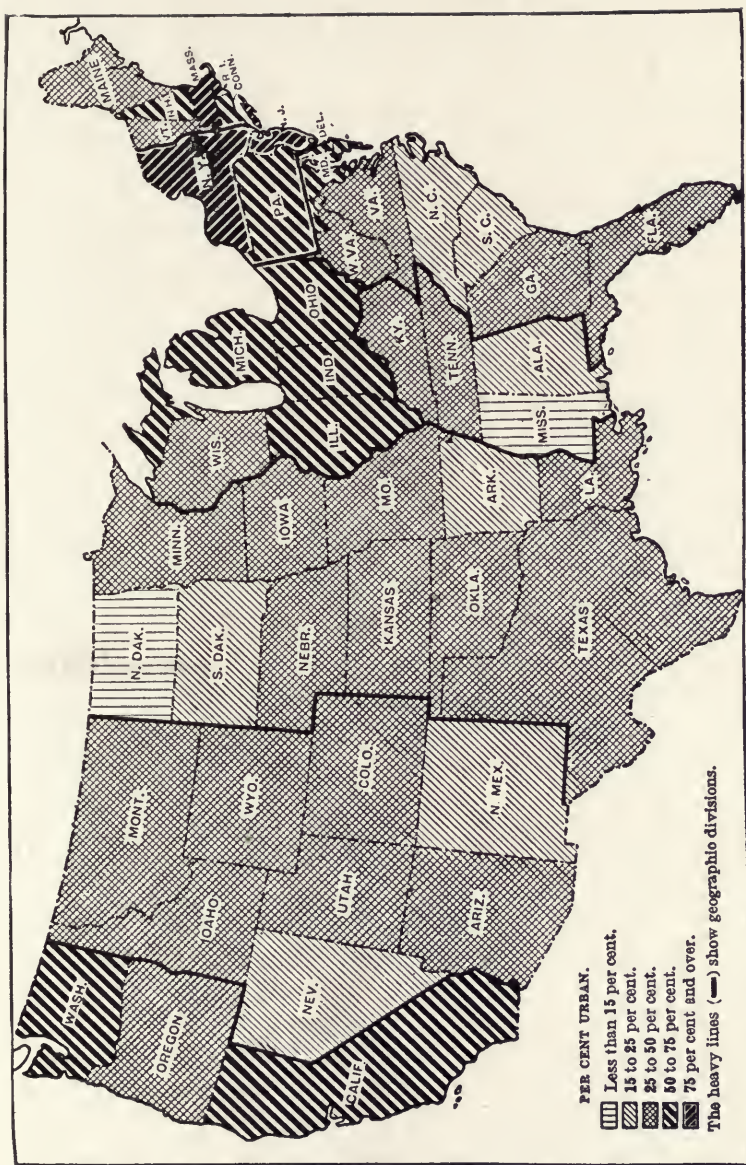
Skyscrapers, the distinct contribution of American cities to urban architecture, are reaching not only to higher sky limits but are requiring more ground area. Buildings are becoming bigger in all dimensions. Large residential hotels and apartments house hundreds of people in the close-in districts of the city, while on the circumference are found districts where beautiful homes are placed on lots in size sufficient to accommodate many single houses of the customary type of thirty or more years ago.

Machine industry has created factories and manufacturing establishments of mammoth size, utilizing land by the acre instead of by the square foot and being forced by mounting land prices to build in the air to obtain greater utilization from ground areas.

Improved regional and local transportation has provided means for carriage of goods and persons safely and rapidly from place to place. This has furthered the cause of the city as a center of industry and population, and has tended to depopulate farm districts.

What effect, if any, have these and other changes in urban life had upon land values in cities?

Wherever there is concentration of people land is in great demand and as a consequence real property values mount in some relation to the rate of population increase. So, in larger American cities, land values have risen until peaks have been attained for business sites and residential lots unrivaled in the record of property prices. New York City has land in the lower Manhattan district on



PERCENTAGE OF URBAN POPULATION IN THE UNITED STATES IN 1920

The above diagram, issued by the United States Census Bureau, indicates the percentage of persons living in other than rural districts, as indicated by the census of 1920. The ratios hold substantially the same in 1928.

Broadway which has been transferred at a reported price of \$75,000 a front foot. Chicago, second largest American city, boasts a price for a choice business location on State Street at \$60,000 a front foot. Detroit has \$40,000 a foot land.

Paralleling the higher land values in commercial sites has come increases in prices of lands for industrial uses. Locations chosen by factories twenty or thirty years ago have attained values so great that the burden of taxes is forcing the sale of old properties and the selection of new sites far beyond the high value districts where prices and taxes are lower, making lessened manufacturing overhead. Improved standards of living have created a demand for better and more elaborate residences. Higher prices are paid for choice sites in suburban districts where the use of land is carefully restricted to preserve the value of the neighborhood for the character of home use for which the property is adapted.

Improvement in living conditions, the desire for less crowded conditions in residential areas and finer homes have caused the creation of beautiful home subdivisions far away from the noise and dirt of the congested portion of the city. This demand has put a premium upon home sites in locations where no use foreign to the district can be made of the land, and building operations, both in lot location and style of architecture, are carefully supervised.

Zoning is a relatively new form of property control which, by defining the types of uses for which certain areas may be used and excluding other utilization, is tending to increase the value of lands in particular districts for the uses allowed. Where land is unrestricted by deed and uncontrolled in use by public ordinance any type of use other than the predominating one is in the nature of a nuisance. The erection of a public garage or a factory in a fine residential district lowers neighboring property values. An old house squatting in the midst of a retail business district is a nuisance and may detract from land values around it.

So the tendency to limit free individual use of land to certain predetermined purposes is creating new and more stable conditions in the real estate market. Losses in real property values will be reduced and a more permanent value in real estate established. Increased density of population throughout the country as a whole as well as the migration to cities has forced owners to make the greatest and best use of land possible. As a result architects have designed new types of buildings where every inch of space is available for

profitable use. The skyscraper covering a tract of land 20,000 square feet in area now houses the business of many concerns and a population of workers of several thousand people as compared with the few who occupied the structures of thirty years ago. Usable ground floor space has been increased materially by steel skeleton frame work making unnecessary wall bearing construction. Back street areas of deep lots are now usable by reason of the development of electric illumination which converts darkness into light and makes the display of merchandise practical under artificial light. Large retail stores today do not depend upon daylight for illuminating purposes.

Creation of more rentable area to a given ground site produces higher returns to the owner and a greater income which gives to the plot a larger land value. More people are using the streets, making more custom for storeroom tenants and reflecting greater value to the land.

This same concentration of people in downtown business areas, these skyscraper buildings, the popularization of individual transportation by means of motor vehicle is creating congestion of streets and sidewalks which is definitely tending to slacken the momentum of mounting business district land values. Vehicular congestion has become so great in some cities and on certain streets therein that either limited curb parking is permitted or no parking at all. Some streets are limited to one way vehicular use. This tends to limit the patronage of stores along such highways to those who can conveniently approach from the direction of moving traffic.

The migration of city dwellers to suburban districts for home location has promoted the neighborhood business section where day to day commodity shopping is conducted by the housewife without the inconveniences incident to a trip downtown. In these localized shopping centers are found many up-to-date stores where almost any need may be supplied. Chain merchants seek such locations for "link stores." Land values for well located sites in such sections have attained heights nearly rivaling the prices being paid in close-in business sections.

Certain city districts are suffering as a result of these changing conditions in the process of growth and expansion. Suburban migration is tending to depopulate closer in residential districts where land values were high due to the quality of the neighborhood. Old homes of the elite are serving as rooming houses, some standing

vacant, soon falling into disrepair, large lawns become grass grown and unkempt and the process of transition from one to another urban use progresses but slowly.

The manner of the transition is no different than is usual as a



BEFORE—

Here is the way Broadway at Fifth Avenue and Twenty-third Street, with its flatiron corner of land, looked in 1897.



AND AFTER!

This shows the same point after the completion of the twenty-story building, the largest flatiron structure in the world.

result of expansion in cities. Old residences are abandoned as homes, become rooming houses, later are removed and new multiple dwellings or apartments to house many families take their place until some higher use demands the space. The rate of growth is being checked, however, owing to the far flung suburban areas which are attracting home owners to seek residence. A greater amount of old residential property is thrown open for new uses without sufficient demand to absorb the property available. This creates what might be termed an "in between" or "twilight" zone in large cities which surrounds the central business district. In this area land values are actually decreasing owing to the transition that is occurring in the

structure and physical plan of cities. Real estate stagnation often exists here while beyond are found busy suburbs with new and charming residences, local business districts and a community loyalty entirely separate from general urban life. Here property values are mounting and real estate prosperity usually exists.

The future city will be a decentralized community made up of many smaller boroughs enjoying almost complete social autonomy but loosely knit into the metropolis as a whole. The curve of urban property values will be greatly leveled according to various types of land use. Great peaks and deep valleys of land values will not exist in so marked degrees. Many locations will have high valued retail shopping districts. All residential land will attain higher relative values due to zoning and private control of its use. Great extremes in real property prosperity and activity will tend to disappear with more stabilization in value. Booms and depressions will be less frequent and will last for shorter periods of time.

Property values, doubtless, will continue to rise, over a period of years, but prices will more nearly approximate economic income value. During and immediately after the Great War prices of real estate mounted rapidly along with all other commodities. Later came price deflation with a return to more stabilized conditions. Speculation for quick profits hereafter will be less common, and fewer people will suffer loss due to unrealized hopes in the wake of land booms which have collapsed.

The new real estate era is here. Noticeable changes have already occurred in cities. Land values are being affected in all sections. Operators and owners are adapting themselves to the new order in city growth and expansion. What the next step in the transition will be is to be seen. A nation once predominantly rural; then the era of great cities; followed by a period of decline and breaking up of the city as a homogenous unit and becoming an *urban region* comprised of many smaller self sufficient urban units. A city will soon be defined as an agglomeration of people living in suburbs, the principal number of whom find profitable employment during the day time in a central business district which is almost entirely depopulated at night.

Review

1—During what period of time did the United States pass from a rural to an urban nation?

2—In what way does pioneering still exist in America?

3—How has foreign immigration affected population growth in the United States?

4—What is meant by intensive use of land?

5—What is meant by decentralization?

6—What building characteristics are unique to the new urban era?

7—What effect have the various influences mentioned in this chapter had upon urban life?

8—Has there been in recent years any marked change in the attitude of government towards the control of land use?

9—How is such control evidenced?

10—How are urban life and living conditions changing?

11—What is the effect on property values?

CHAPTER 18.

SUBURBANIZATION

Population drifts to suburban areas—Small satellite towns develop community spirit—The automobile a powerful factor in decentralization—Rapid transit and what it has done—Changed standards of living—Increased facilities for suburban homes—Will the airplane bring greater changes?

Urban dwellers are exhibiting a distinct tendency to migrate to outlying sections, thereby causing suburban communities to spring up and develop rapidly from small nuclei of scattered homes about local business districts. It is not unusual to find development of this character surrounding the larger cities of America in all directions for miles beyond corporate limits. These satellite towns and cities form one of the latest and most interesting phases in city growth.

Frequently these suburbs are industrial in character, developing around some large manufacturing plants or group of plants. Sometimes the actuating force in the creation of an outlying community has been merely the desire of people to locate their homes away from the noise and bustle of a busy city, in nearby areas where a touch of village life is possible. These peripheral communities, although separate municipal corporations, are in fact usually dependent upon the city proper for their existence. Their residents are engaged in business, or employed in the industrial or commercial operations of the parent city.

The location of such suburbs may exert a determining influence upon directional growth of the parent community, and often, as a result, become incorporated into the city proper after it has inundated them, and thus lose separate identity. Although a distinct community spirit often characterizes these settlements, yet they become, culturally, a part of the city long before their actual incorporation therein. Their residents are really city minded people in search of comfortable residence in a smaller urban community convenient to the multitude of various business enterprises of the larger city.

The general use of the automobile has been the most important factor in forcing people away from the congested centers into outlying districts, although some of the largest cities had marked suburban

developments years before the popularization of automobile travel. Railroads and interurban electric lines provided the necessary transportation to and from the parent city, suburban residents commuting daily.

The remarkable mechanical development of the motor vehicle, and its popularization as a method of providing transportation both for passengers and freight may be charged with principal responsibility for the steady increase in suburbanization, which today is common to almost every city. The city now is a metropolitan area rather than a sectional governmental unit.

Cuyahoga County, Ohio, which has for its principal city, Cleveland, has within its boundaries sixty-one municipalities which are satellite to the greater urban neighbor, and are considered in fact, though not legally, as a part of the city itself. The suburbs of New York and Chicago have overflowed the boundaries into adjoining states.

Rapid transit, prior to the advent of the automobile as a transportation factor, was existent in only a few of the larger cities. New York had elevated railways and subways to make it possible for the city worker to be a suburban dweller. Chicago depended upon elevated lines and commuter service furnished by various steam railways. Other American cities such as Columbus, Indianapolis and Detroit enjoyed a limited suburban transit service by interurban electric lines. These transportation facilities fostered the development of small towns in the environs of the larger city. But not until mechanical transportation became individual with the automobile as the means did any real impetus arise to push forward the rapid growth of the suburb and suburbanization.

It is doubtful if, in the early years of the motor vehicle, its importance in urban and rural living was realized. In fact, the tendency of cities to decentralize, and the corresponding rise in importance of the nearby suburb did not come about until the era of the popular and low priced automobile. Motor cars were brought within the price range of the mechanic and the factory worker. With the freedom of movement afforded by use of this new invention, distance, as a barrier to suburban living, was removed, urban growth was possible in districts inadequately served by street surface lines, and any place within thirty minutes driving range of a worker's place of employment became a potential homesite.

Thus came an exodus from congested residential districts of

large cities. Then suburbs began to command attention as desirable places of residence, where fresh air and abundant sunshine made gardens bloom, and the little frame bungalow seem like a real dream home. There the children might enjoy greater areas for play and recreation, and not be forced into the streets for their games. Thus there came to be added to the other forces which cause cities to push out beyond corporate boundaries a factor that made the family more mobile, and resulted in the popularization of suburban communities as places of residence for those of even limited and moderate means.

As an adjunct to the family motor car as a means of transportation has arisen the motor bus to serve those suburbanites who either from choice or necessity do not use the individual automobile



THE ERIE CANAL IN SCHENECTADY BEFORE IMPROVEMENT

This eyesore extended for years through the City of Schenectady, N. Y. See opposite for what was done to it.

for personal conveyance from place to place. Bus lines now operate not only along main highways, but also serve districts which are without street railway lines. Comparatively little capital is required to furnish an urban area with bus service where the extension of trolley or interurban lines would require the investment of large sums of money. The automobile has affected not only the layout of urban areas, but has also materially changed city life. It is perhaps the principal influence in decentralization which is now altering our modern cities. America is truly a nation on wheels.

Suburbanization has been promoted in recent years by a changed standard of living. In the latter part of the nineteenth century

those of moderate means who dwelt in cities were content with a tract of land twenty or thirty feet in width, and just large enough to accommodate a house and a small "back yard." Cincinnati has rows of such homes in its older residential sections. In cities in the eastern part of the United States, such as Baltimore and Philadelphia, long terrace like structures provided individual homes for many people, each family owning a portion of the building in width from twenty to twenty-five feet, with party walls separating its habitation from adjoining units. These terraces were built out to the street sidewalk line, and whatever yard the lot afforded was located in the rear of the dwelling.

The innate desire for more spacious quarters, coupled with a revolt against congested living conditions, has operated to attract



ERIE BOULEVARD, BUILT ON THE SITE OF THE ERIE CANAL

This spacious and useful traffic highway was built after the canal bed was filled in.

people to outlying areas where a somewhat larger lot could be purchased for a small price, and a single detached dwelling constructed with yard space surrounding it for gardens and grass plots. Modern education emphasizes the importance of sunlight and fresh air, and inveighs against congested living conditions in cities. This teaching, instilled in the minds of the present generation, has operated to further settlement in less restricted districts.

The urban dweller today wants space in which to move and breathe, more land to own, to garden, to lay out in lawns and flower beds. Whether this would have been possible for the man of limited

means without the development of automobile transportation as a means of getting to and from work is quite doubtful.

During the first two decades of this century the city proved a magnet, drawing to residence therein many people from rural districts. This migration from the farm and the small urban community brought within the confines of the city many people with an experience and heritage of rural life. For a time the conditions surrounding city living proved attractive, but the desire to have more room, to enjoy the open spaces, to see trees and grass, and cultivate



ART IN GAS STATIONS

Gasoline filling stations, indispensable in cities, can be constructed artistically, if so desired. Here may be seen a very attractive type to be found in Indianapolis.

flowers, operated to cause a secondary migration away from the more congested areas, and into the suburbs for residence. This factor is another of the intangible forces which have combined to promote the phenomenon of the suburban satellite town, whose citizens find their employment principally in the parent city, but decline to live therein.

In still another way has the motor vehicle advanced the cause of the suburb. Automobiles have become so numerous in America that today the *entire population* of the United States could be loaded into motor vehicles and given a ride at the same time. *No one would have to walk.* With some twenty-five million cars using the streets and highways of the country at various times, city streets, with

the heavier congestion of motor travel natural to more popular areas, have become zones of great hazard to personal safety. The noise, odor and confusion accompanying the operation of many automobiles is not conducive to comfortable living near to streets where heavy motor traffic is common. In an effort to avoid this nuisance and danger as much as possible, many have sought refuge in districts where fewer vehicles use the streets, and these areas are only found afar from the urban districts where apartments and multiple dwellings abound, and business enterprises demand the presence of many motor cars.

Decentralization has been further advanced by the increasing use of the telephone. This instrument of communication is found in use in so many American homes that its absence rather than its presence excites comment. A suburbanite may, if he chooses, live miles from his best friends and associates, and yet be in regular and frequent communication with them. Today a family's neighbors need not be its friends.

Amusement for suburbanites is afforded by local neighborhood theaters, some catering to those who enjoy moving pictures, and others presenting stage productions. In these playhouses, productions equal to any presented in the city theaters are given, thus removing the necessity for seeking downtown amusement places for entertainment. The radio has brought into the homes of suburbanites as well as city dwellers entertainment quite sufficient to meet the requirements of most people.

Suburban homes now may be just as complete as money will permit. A home may have its individual lighting system, its water pumping outfit, and its gas well in districts where natural gas is available. Many large cities are extending paved roadways and public service facilities far out beyond their borders. Electric power and lighting are sometimes available for twenty or thirty miles from a large city's borders. Water is often piped out along country roads far beyond a city's limits. If it is not so available, a little plant, wonderfully complete in itself, can be bought for a modest sum to furnish electricity for lighting and operating water pumps. Sewage disposal systems can be installed at small expense.

Perhaps the most ambitious plan of suburban development ever attempted in America was inaugurated by O. P. and M. J. Van Sweringen of Cleveland, as a further extension of their Shaker Heights Village. These realty developers acquired several thousand acres

of land lying to the southeast of Cleveland. Accompanying its development and sale, they planned and put into operation two electric rapid transit lines, in addition to constructing fine broad roadways. Hundreds of acres were included in the initial development. To offset the condition of a market already well supplied with high class residential subdivisions, they worked out a unique arrangement for the gradual building up of the territory to avoid glutting the real estate market. Blocks of land were sold, ranging from five to ten



A NOVEL CAR TRACK "SCREEN"

Car tracks on wide boulevarded streets in residential neighborhoods, unless they are set off with smoothly cut lawns, often are far from being attractive. In Roland Park, Baltimore, privet hedges have been grown at each side of the right of way, effectually screening tracks from the view of home owners, whose properties border the thoroughfare.

acres in size, streets laid out which were improved by the assessment method as needed, payments for the whole being extended over a period of ten years.

A customer purchasing a ten acre tract, for the first five years was not permitted to build more than one house, although the ten acre tract was subdivided, on paper at least, into lots having front-

ages of 100 feet each. According to the plan, the buyer of such a tract was permitted to sell off lots from his little estate, or construct other houses thereon. Architectural control rested with the developers, so that a good type of dwelling had to be erected. The purpose was to have the buyer secure a homesite for himself and later benefit by selling off his excess land as a natural market developed for it. Salesmen handling the property estimated that if land in such areas reached a value of \$100 per foot front in ten years time, the initial buyer would enjoy a profit of approximately twenty-five per cent a year on his investment. The plan created a great deal of interest among subdividers and city builders, and it seems likely that the principle will be followed extensively elsewhere.

Subdividers frequently find that at times when it may be difficult to sell lots of forty or fifty foot frontage in built up sections of a city, it is easy to cut up a large acreage four or five miles out from a city's limits, and sell one, two, or more acre tracts to persons eager to acquire small properties for their own use. These small estates frequently have frontages upon market roads, and modern improvements such as water, sewer and gas may be installed as rapidly as these utilities are available. Later the tract may be resubdivided into building lots when a natural market arises for their disposal. Many families, with small down payments, are thus able to acquire homesites for themselves, and later have land to sell as values increase.

Small villages and towns lying ten, fifteen and twenty miles away from downtown sections of cities have in recent years felt an impetus in growth due to this suburbanization process. Linked to the city by railroad lines or busses, or supplied only with passenger automobiles, transportation becomes available, and a free and independent life is provided for many who do not care to live in congested areas in cities where ordinarily their means would naturally compel them to reside. Taxes are lower, hazards from disease and automobile accidents to children are minimized, fresh air is available at all times, and a much more delightful environment is afforded.

The suburbanizing tendency about a city is controlled, of course, by the distance a workman can live from the place where he is employed. Ordinarily a worker does not care to walk more than a mile and a half, or two miles, morning and evening, to and from the place where he is employed, taking not more than half an hour to do so. When men worked ten hours a day, and drew a wage of from \$1

to \$1.25 a day, as many did in former years, it was a hardship for them to spend ten cents a day in car fare. Consequently many were compelled to walk to work, and this being so living quarters were found near their work. Then came the nine hour day, and somewhat higher wages. Later the eight hour day came into existence, with wage scales from four to six or eight times what they were in earlier years.

The Michigan Manufacturer and Financial Record, in August, 1925, published an article that traces the progress of the suburbanizing process that has revolutionized urban living in recent years.

"With the nine hour day," stated the article, "came better wages. Also about that time came faster street car service. Two nickels for car fare coming and going did not make so big a hole in the day's wages when workmen got up to \$2 or \$2.50. So the worker used the street car and lived farther from his factory. How much farther out did he go? He went no farther than the distance consumed by his shortened hours of labor. On a ten hour day he lived half an hour away. On a nine hour day he could add another half hour each to his going and his coming. So he didn't go any farther than an hour's distance one way from his work. But he did go that far, on the electric street car lines. His going that far opened up all the real estate within that limit for him and others like him to live on.

"Taking one thing with another, the walk from his home to the car line, and from the car line to his shop, this new condition let him live as far as four or five miles from his factory. In his walking days, he rarely lived more than a mile and a half away. Under the new conditions, he could go as far as four miles. In places like Chicago, where he was helped out by high speed, cheap fare suburban trains, he could go ten or fifteen miles, and he did.

"That's what made subdivisions open up within those limits in that day, and people go and live on them. Even then some folks thought the real estate men were subdividing too much land. But it turned out that the whole business was ruled by a higher law. The worker could go so far from his factory, and a lot of them went the limit of distance. Then came another turn of the wheel of fortune. The motor car was devised, manufactured, cheapened, and made almost everybody's vehicle. Three or four hundred dollars would let anybody have a good working motor car, and mechanics

and factory hands got more use out of them for less money than anybody else.

"These conditions once more extended the distance a worker could live from his shop. The eight hour day had come. Wages had gone up. The worker had a bigger margin of earnings, after his living expenses were paid. Under the conditions of good roads and the use of the 'flivver,' the worker can now live as far away from his work as he can travel in an hour and a half. Most of them haven't gone that limit yet. But tens of thousands in Michigan, particularly near Detroit, have gone an hour's distance. That's eighteen or twenty miles under average conditions. This independence of other kinds of transportation gives the 'flivver' owning worker, who is buying outlying real estate and living on it, a good many advantages.

"To begin with, he has a lot of fun, going and coming. He travels for a cent and a half a mile, where the street car and the bus cost him two and six-tenths cents a mile. He can live seventy-five per cent farther away from the shop with 'flivver' transportation than he can with bus or carline transportation, for the same price. He is independent of his employment. The worker who goes by street car or bus must live on a service line going near his shop and his home. If he loses out at work and has to seek other employment, he must move near a new line. With his 'flivver' he may change the location of his work at pleasure. He only 'cuts out' from his suburban home in a new direction.

"Under present day conditions people can live farther away from the busy centers than they used to. That is the justification for the sale of outlying real estate. One can measure whether such property is a good 'buy' or not by measuring the distance between its location and the nearest employment centers, with the 'flivver' going the ordinary safe gait. If it's within an hour's distance that way the person who buys it and lives on it is as near to his work as he ever was. And that's both buyer's and seller's answer to the question: 'Isn't this place too far out?'"

Suburbanization is hastened, to some degree, by the desire of many a city resident to own a little home in the country, where he and his family may merely spend the hot summer months. Picturesque locations about the larger cities are being gradually built up with this class of residents, who erect comfortable cottages, or even pretentious homes. They spend three or four summer months at

these retreats, returning to their city homes or apartments in the late fall. Finally, as the city grows, distances seem shorter, and many take up their permanent abodes on their country holdings, enlarging and modernizing cottages into good sized dwellings, connecting up with public service facilities as they are extended. Many such districts will be found about the borders of American cities.

Inability to find single homes at any cost has driven thousands of New Yorkers into New Jersey, Long Island, and other territories adjoining the great eastern metropolis. Manhattan itself has become a city of flat dwellers. Owning separate detached homes has become almost an impossibility for any but the very rich. Increased rapid transit facilities enable workers of all classes in the great city to reside in small towns ten to twenty-five miles away from their daily work. They have been literally forced to become suburbanites.

A desire to be near a favorite golf club, a bathing beach on the lake shore, or a bridle path amid rustic hills, not to mention the glee of children in being out in the open country with all the advantages that such life has to offer, has been the deciding factor with many a family which has forsaken the crowded town, and taken up residence out beyond the big city's borders. These are, among the pioneers but pioneering in these days is not what it was a decade or two ago, when modern transportation and sanitary facilities were for the most part lacking, or obtainable only at almost prohibitive expense.

What affect will the airplane have on this tendency to forsake the city and live out in the open country? There are those who do not hesitate to predict that with the coming of cheap and efficient airplanes, with contrivances for landing on restricted areas on tops of city buildings, a prosperous business man will think nothing of living fifty, sixty or seventy miles away from his office, hopping into work and back again each day, an air pilot taking the place of the chauffeur who now drives him to work, calling for him at the end of the day to return him to his home. When that day comes—and come it may in the next few years—the boundaries of city life will be tremendously widened, and workers of a city will be scattered over the far flung hills, until scarcely a spot anywhere within a half a day's automobile ride at present, but will really become a part of the suburbs of a great city.

Suburbanization, a factor of city life which is scarcely more than a decade or two old, is yet in its infancy. The future holds more wonders in store!

Review

- 1—What is meant by suburbanization?
- 2—What has been a most potent factor in bringing this condition about?
- 3—What desirable features do the suburbs offer as places of residence?
- 4—How is the motor bus increasing the flow to the suburbs?
- 5—How have traffic hazards created a desire on the part of people to leave congested areas?
- 6—Has the telephone helped suburbanization? How?
- 7—What change has taken place in the field of amusements?
- 8—What economic factors induce workers to live in the suburbs?
- 9—Outline the features of a large suburban development adjoining Cleveland.
- 10—What appeal does the small two, three and five acre farm have to the city dweller?
- 11—How have villages and towns near large cities been affected by the suburbanization process?
- 12—How far may a worker live from his job?
- 13—Explain how shorter working hours and increased wages have caused workers to move to the suburbs.
- 14—What does one writer predict as to the distance a worker can and will go out?
- 15—How and why have temporary summer homes finally become permanent ones for many people?
- 16—Why has New York become a city of flat dwellers, and where have the city workers been forced to go?
- 17—How do golf clubs and bathing beaches become magnets for permanent development about them?
- 18—What prediction is made regarding the airplane and its effect on suburban growth?

CHAPTER 19.

THE DEVELOPMENT OF NEIGHBORHOOD SHOPPING CENTERS

The corner store and the shopping center—Trend is toward the development of many localized trade centers—Effect of the automobile on this development—Neighborhood chain stores—The appeal of the neighborhood merchant to the women shoppers—The planning of such shopping centers—Examples of cities where these sub-centers are found.

Neighborhood shopping centers in urban communities are neither new nor unusual, but in recent years economic changes have occurred which make these centers quite different from the corner stores that formed the business district of the towns of yesterday.

For a time after the advent of the automobile it seemed that the individual shopkeeper, catering to the needs of a neighborhood population, was doomed to business extermination. The general store at the country cross roads found patronage much reduced when the motor vehicle made it possible for the farmer's wife to proceed to the nearest town to do her shopping. Instead of the Saturday pilgrimage of the "horse and buggy" days, the trip to town became an event of almost daily occurrence. Stores in the larger towns profited at the expense of the country and small village merchants. Housewives found greater satisfaction in shopping where a larger selection of merchandise was found.

To lesser degree the merchant having his shop in residential neighborhoods of cities found business affected by this desire of the housewife to patronize the larger downtown stores. Central shopping districts in towns and cities increased in size with the opening of new stores to accommodate increased patronage. The outlying shops were patronized only to supply the occasional needs of the home, something forgotten or some article needed in an emergency.

The evidence still seems to indicate that the trend of major shopping is away from the small towns formerly patronized by a vanished "horse and wagon" trade. Not only do people go farther to buy, but they tend to locate in the larger centers of population. In sections of the United States that have truck lines supplementing

the freight hauling service of the railways, the influence of this new form of transportation upon the trade of local stores is more conspicuous than elsewhere.

The automobile, while in a degree operating to destroy the small town merchant and enlarge the business of his city neighbor, has also created a situation which is, in reality, proving his salvation.



TYPICAL CROSTOWN BUSINESS DISTRICT

This business center, at Euclid Ave. and E. 105th St., Cleveland, five miles from the city's central business district, enjoys land values as high as \$7,000 per foot, for a depth of 100 feet. It is a miniature city in itself, with stores, schools, theaters, hotels, markets, Y. M. C. A., fire and police stations, and churches. Many such centers develop at outlying points in large cities, and promise to become of even greater importance in the future.

As motor vehicles increase in numbers, the streets of the larger urban centers become more and more congested. Parking is increasingly difficult. Streets designed to bear the load of the horse and wagon, give way under the pounding of motor trucks, so that progress in congested downtown districts is often hazardous and slow,

The pleasure of an automobile shopping trip to the city soon lost its novelty and ceased to attract the suburban resident or the farmer. Concurrently with, and as a result of, the increased use of motor vehicles came a migration of urban dwellers building homes in districts far beyond those that formerly were the residential sections of the city. Many times these new home communities were incorporated into small villages, whose citizens found employment in the nearby city. Inasmuch as these new sections arose without reference to established transportation facilities such as railway or street car lines, frequently the breadwinner of the family found it necessary to use the family car to transport himself to and from his daily employment, leaving the housewife without means of readily reaching the downtown stores to do her shopping.

To satisfy this need, neighborhood stores became necessary and the demand promptly brought the supply. These shopkeepers recognized that their function would be in the distribution of commodities which were the daily requirements of families. Grocery stores, meat markets, bakeries, drug stores and creameries flourished in these new trade centers. As the section grew in population, a drug store, a hardware store, a beauty parlor, a barber shop and a branch bank would locate nearby. Occasionally a small novelty store handling dry goods and haberdashery would find opportunity for business. The moving picture house came, in due time, to furnish entertainment for those who found a trip to the larger downtown theatres undesirable. Accompanying them came the candy store with its soda fountain and novelties. Soon the neighborhood had its own full fledged shopping center where all articles needed for daily use could be obtained and where some of the necessities of a more permanent character could be purchased. Here marketing was carried on with much the same purpose that was usual in the trade center of the neighborhood in earlier days.

Contributing to the growth of localized shopping centers has been the growth of chain store merchandising. This evolution in retail selling methods has been a development of the twentieth century and has gone forward with great rapidity. In all cities of any size, the grocery and the drug businesses, in particular, have passed into the control of large corporations operating many retail stores in various neighborhood centers. Here may be obtained standard merchandise frequently at prices lower than the individually operating merchant can afford to sell it. Usually these stores maintain

a "cash and carry" plan which requires the shopper not only to visit the store but to pay spot cash for purchases. For the convenience of patrons it has been necessary to locate these chain stores within easy walking distance or short driving range of the homes of the people from whom they expect patronage. This plan has operated, therefore, to foster the growth and development of the new type of outlying shopping center which is common today.

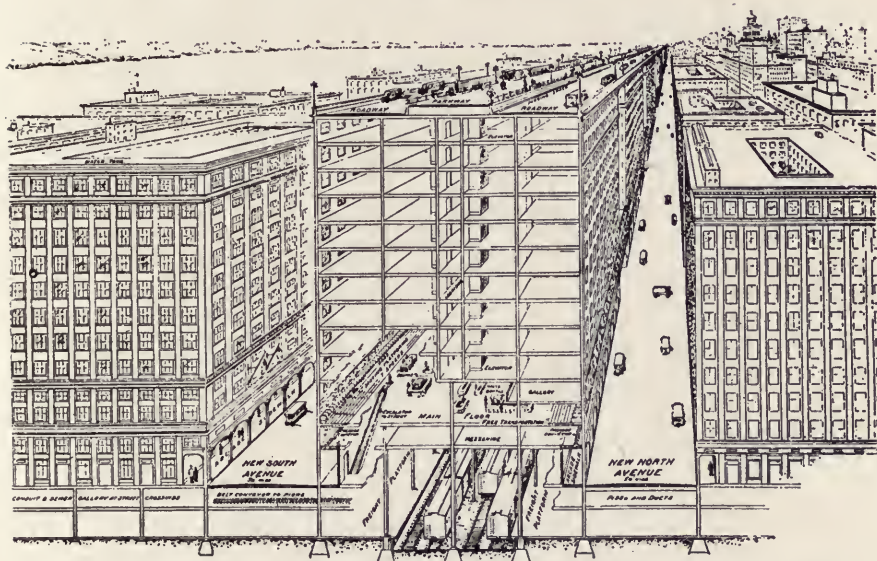
Another influence, which has contributed to localized shopping districts, has been the growth in popularity of the moving picture as a popular form of amusement. Both children and grown-ups, master and servant, the aristocrat and the laborer, all seek the "movie" for relaxation. Capitalizing this tendency, amusement promoters have invaded residential neighborhoods and have constructed theatres which often compare favorably in appointments with the most elaborate of those located in downtown areas. Here entertainment is available without a trip of several miles before and after the show.

Show attendants furnish patronage for types of small stores that invariably cluster around such theatres. Usually the operator of a moving picture house seeks a location near to or in a neighborhood shopping center because of the matinee patronage obtainable from women shoppers and also for the reason that normally these business districts spring up and develop in areas which are the natural and convenient centers of the localities served.

Trading with a neighborhood merchant has always appealed to the average housewife because of the personal element. The corner groceryman will cash the household check, or send a clerk to madam's machine carrying her well filled basket. If supplies are needed immediately, a child may go the short distance to make the purchase and the grocer, being acquainted with the customer, will know just what to furnish. Where delivery service is supplied, an order may be telephoned and the delivery made promptly. Personal service has not been overlooked by the chain store merchants, for clerks are constantly instructed in catering to customers to render courteous and efficient attention to the smallest detail.

As community trading centers become again a part of the urban plan, the problem of controlling their growth has arisen. New outlying business districts in American cities frequently become most unsightly and disorderly. Developed, for the most part, about the intersection of two main highways, these centers sometimes at-

tract heavy automobile travel and create traffic problems which frequently become as difficult of solution as any existing in the downtown areas. Buildings of every color, size, shape and design are sometimes huddled together in hideous array. One story "taxpayer" structures, resulting from the feverish haste of a land owner to convert his property to profitable use with the least possible expendi-



(C) John K. Rencken

CONTINUOUS BUILDING FOR RAPID TRANSIT AND HOUSING

This novel sketch comes from John K. Rencken, a New York engineer, and provides for a building stretching sixteen miles from New York out to Yonkers. In the basement there would be operated freight trains. The ground floor, except at street intersections, could be used for business purposes. On the second floor would be noiseless rolling platforms traveling at different speeds. Above would be apartments, while the roof would be a continuous boulevard for automobiles.

ture of capital, seem to predominate. Unsightly billboards cover vacant lots and perch on the roofs of store buildings; rear areas and alleys are the dumping grounds of all kinds of store refuse; unrelated and uncongenial types of shops neighbor one with another without regard to the needs of the community to be served. Often so many competing stores are opened in a given area, that failure inevitably results to the weaker merchants.

Certain farsighted suburban developers have recognized these

undesirable conditions and in laying out new subdivisions have carefully planned the areas used exclusively for business purposes. A well designed trading center contributes to real estate values in any residential district, whereas such a section developing without control or supervision may operate to destroy the desirability of much adjacent land for home use.

J. C. Nichols, of Kansas City, has been foremost among subdividers in this country in studying and planning business centers in residential districts. Outstanding in attractiveness have been the centers which he has developed as a part of his subdivision operations. In writing in the *Journal of Land and Public Utility Economics*, he points out several desirable principles in planning shopping centers. ⁽¹⁾ Among these are:

1. Streets of sufficient width to permit diagonal auto parking.
2. Alleys of a width of twenty-four feet or interior loading courts for the stores should be provided.
3. Building heights should be limited to one or two stories.
4. Short blocks between streets.
5. By-passing of through traffic around business centers.
6. Massing of shops in contiguous blocks as a traffic aid.
7. Related businesses should be grouped.
8. Harmony with adequate variety of building design should be required.
9. Control of billboards, display signs, store fronts, awnings and sidewalk obstruction should be exercised.
10. Wide streets, open areas, some ornamentation in the nature of fountains, grass plots and flower beds is desirable.
11. The entire business area should be so restricted as to permit only such space as is necessary to supply the community requirements to be used for business, and if necessary this area may be extended from time to time, as population increases.
12. In general, minor groups of stores intended to

(1) *Journal for Land and Public Utilities Economics* for January, 1926.

supply immediate and daily needs should not be placed closer than one-half mile apart. Major shopping centers to supply the general and occasional needs of a community may be one or two miles apart.

Mariemont, a village planned and laid out by John Nolen, city planner, for Mrs. Mary M. Emery, and built nine miles from Cincinnati, is a community developed according to a well conceived design. Not only have buildings been built to provide apartment housing for the inhabitants, but attractive single houses and various types of multiple dwellings adorn the village. As a part of the plan a business district was designed and certain buildings constructed to house such stores as are necessary. Around the "Town Center" as it is called by the villagers, will be placed "every sort of shop, markets, theatre, hotel, office building, bank, post office, public library, and a town hall, all within easy walking distance of every residence." Shaker Heights Village, adjoining Cleveland, has its well planned business district, although in its origin it was primarily conceived as a residential suburb and inadequate provision was made for the development of shopping centers to serve the residents. Longview, Washington, was planned primarily as an industrial community as headquarters for a large lumber concern but as a part of the design a complete business district was provided.

Where towns and villages have not made proper provision for business districts or where limitations have not been prescribed to control their development, it is possible to enact zoning ordinances which will operate effectively, providing the land has not already been built upon. In this way many municipalities are attempting to regulate business districts within their confines and provide against an oversupply of property for such use.

With the passing of the "general store" of a former generation, and the old shop-keeper with his carelessly arranged stock of merchandise, has come the modern neighborhood store, well lighted, with attractive displays of wares in window and on shelf, tidy and clean and conducted according to the best modern practice. Those few remaining stores of the old type are doomed to business extinction. The neighborhood buyer is a discriminating customer, with tastes requiring satisfaction not only in the best quality of merchandise, but also properly priced. The charge account and regular delivery service is yielding to the "cash and carry" plan which is more profitable to both merchant and customer.

General needs of most customers will still be supplied by the downtown merchant. Here household furnishings, ready-to-wear garments, men's suits, shoes, musical instruments, jewelry and many other items will be supplied because for such buying, which is occasional, the shopper seeks a larger and better stock to select from. Furthermore, the cost of establishing stores of this character is so great that branch units are seldom practicable or profitable. Certain department store executives, however, are considering the advisability of opening subsidiary shops in residential neighborhoods where women may find parking space for automobiles while shopping. A selected stock of merchandise will supply the ordinary requirements of the patron and special goods can be furnished upon order. Hollywood, California, six miles from the central Los Angeles business district, has over twenty-five branch stores of large downtown merchants in addition to scores of independently operating shops.

As cities push out farther and farther with population increases, and as more satellite cities and suburban communities develop, it is hard to believe that the tendency for neighborhood shopping centers to increase will not force larger areas to be thrown into such use. The process of decentralization of central business districts will probably continue until only such articles as are necessary to supply the more general needs of people may be purchased "downtown."

As a natural result of the growth of outlying business districts has come high land values in such sections. Particularly is this true where an area available for such use is limited by special land restrictions or zoning laws and less than the neighborhood requires. Merchants compete keenly for space in such districts, contracting to pay rentals which at times rival prices paid for spaces in downtown shopping areas. Land values mount accordingly and high prices are received by land owners whose property can be secured for commercial use.

Chicago has a number of these outlying business districts. In the Sheridan Road and Wilson Avenue section a corner has been leased on the basis of \$33 a square foot, or in excess of \$5,000 a front foot on Sheridan. At 63rd and Cottage Grove Avenue, a corner is reported as earning on the basis of \$10,000 a front foot. Halsted and 63rd brought \$84 a square foot in 1923. In Cleveland, at Euclid and East 105th Street, land has been valued at \$7,000 a foot front on the avenue, while at Cedar Avenue and Lee Road, frontage is held at \$2,000 a foot and more. Examples could be multiplied

without number to illustrate the high values that result from the development of outlying shopping centers.

If, in addition to automobile traffic, a location attracts heavy pedestrian travel of the buying type, high retail rentals will result and high land values consequently occur. Sometimes the intersection of street car lines, creating a transfer point, will make a district desirable for certain merchants who would otherwise pass it by. Cigar stores seek such locations and pay high rentals. A corner so situated is a favorite location for a chain drug store. Confectionery shops and recreational parlors are attracted and compete for choice locations. Grocers, brokers, and butchers are forced to marginal stores in the same district not being ordinarily able to compete in the race of high rentals, as the margin of profit on foodstuffs is not nearly as high as the buyer often thinks.

Centers where the highest land values exist are sometimes more than mere neighborhood shopping districts. They may serve a region miles in extent. They are, in effect, secondary high class retail districts and cater to more than the daily commodity needs of the housewife. Such areas must be distinguished from the commoner and more localized shopping center.

Review

1—Describe a typical neighborhood shopping center which you have seen.

2—How does the automobile foster the growth of these centers?

3—Where are such subcenters found?

4—Name the type of stores which are found in the shopping center.

5—Has the increase of chain stores contributed to localized shopping?

6—Compare the "cash and carry" plan of merchandising with the "credit" plan.

7—What conveniences do the local merchants offer the shopper?

8—How may the growth of shopping centers be controlled?

9—Give the substance of recommendations of J. C. Nichols on trading centers.

10—Where are the natural places for subcenters to grow up?



PHILADELPHIA LOOKS TO THE FUTURE

Millions of dollars have been spent by Philadelphia in condemning land and constructing Fairview Parkway, a diagonal street which greatly relieved the city's traffic problems, and opened new districts for residential and business uses. American cities are spending colossal sums for new highways which should have been constructed or planned much earlier.

CHAPTER 20.

CONCENTRATION OF BUSINESS IN SPECIAL LOCATIONS

- Co-operation the modern watchword—Competitors now business neighbors—Movement of mass versus class—Reasons why merchants in a given line like to be together—Types of business which patronize trade “centers”—Buildings for professional types—Manufacturers and wholesalers follow the practice—Grouping of businesses will continue and increase.

At the beginning of this century a merchant who located his store near or next to his competitor almost invited business ruin to himself and his neighbor. Today, especially in larger American cities, there is a marked tendency for competing businesses to seek locations in immediate neighborhoods. Department stores profit most when located near each other, so that shoppers attracted by the advertising of one store may conveniently shop in another. Greater crowds are attracted, and the district enjoys a larger potential purchasing power, where several large shops engaging in similar business are situated.

Not only do retail merchants seek competitors as neighbors, but the same practice prevails with wholesalers and jobbers, professional men and manufacturers. The corner grocer now travels downtown, and in the boundaries of one or two blocks purchases from several different jobbers a stock of groceries, and may be back to wait on customers in much less time than if he were compelled to find his wholesalers widely separated. In one warehouse he may find all that he wants in canned goods, while price dictates that he buy his stocks of sugar or flour from another jobber across the street. A third warehouse furnishes him with his day's supply of fruits and vegetables, or a particular brand of staple groceries not found at either of the other wholesalers.

Doctors, dentists and lawyers have entire buildings designated exclusively for their special needs. Medical centers and clinic hospitals are yearly becoming more popular with physicians and surgeons who now seek close association with one another. The fear of competition through proximity in location seems to have almost

entirely disappeared. Doctors engaged in the practice of the same branch of medicine or surgery often office in suites, with reception and waiting rooms in common.

Garment manufacturers are colonized in some cities, in others, the industrial section will house a number of competing plants in relatively close proximity. This trade grouping is found in almost all cities of size, and the attitude of business men favoring this practice does not vary materially from city to city, or section to section.

Not only does grouping occur with businesses engaged in the same line of enterprise, but kindred businesses gather round about the location favored by the enterprise to which they are tributary. Distribution, according to class of shoppers, is likewise common among merchants in modern large cities.

Fifth Avenue, New York City, is credited with being the ultra fashionable shopping district of America. Here may be found the shops merchandising the most expensive articles known to the trade. Here is the street that lures the buyer with much money to spend.

Broadway, New York, enjoys the position of catering to the needs and wants of the masses. Large department stores supply almost the entire needs of subway patrons. Here price competition is keen. The difference of a cent a yard on merchandise may swing or lose a sale.

In most cities the high grade shopping district is located somewhat apart from the district where shops cater chiefly to the masses of the people, and where articles are sold on a basis of price rather than quality of the goods or the reputation of a particular merchant.

The tendency, however, is for mass to crowd out class. Therefore, the fashionable shopping district of today will gradually yield space to merchants who cater to the needs of the many rather than the few, such as five and ten cent stores, large popular priced department stores, and women's ready to wear shops.

The story of Fifth Avenue bears testimony to this trend in merchandising. Some years ago a famous jeweler moved from Union Square to a new store on the avenue. His migration led others catering to the elite of the city to open shops nearby, and soon the street became famous throughout the world as an exclusive shopping center. For a time these merchants felt secure from the popular priced stores with their bargain counters and sales, and that their

"four hundred" clientele could shop in security from the close association with the "run of mine" individuals.

Frank W. Woolworth, however, determined to open a store in the heart of this district, and the jeweler, the exclusive furrier, and "the costume shoppe" had as neighbor a modern Utopia for the mass shopper, the five and ten cent store. To the astonishment of many this store prospered, and as a result more invasions followed, particularly restaurants where the dairy lunch and the "automat" of the nickel in the slot type enabled customers to serve themselves and avoid tipping. The mass versus class movement continues until the popular priced store drives out the exclusive merchants because of the ability of the former to pay higher rents. A new elite shopping district grows up in another location, and, later, the same invasion will repeat itself.

Of equal interest is the process so evident today in all cities of over twenty-five thousand inhabitants, where merchants group to serve the same class of trade. Stores catering to women seek locations near each other. Around a high grade department store will be found smaller shops selling suits and cloaks, blouses, lingerie, dresses, hosiery, shoes and other women's wear, all in competition with the department store and each other.

Merchants in high grade shopping districts vie with one another in fitting up attractive stores, with ornamental display fronts, artistic and expensive counters and equipment where goods may be displayed to greatest advantage. These smaller specialty shops seek to nestle next to or near large department stores, monopolizing the so-called "one hundred per cent section" of the city's retail business district. High rentals will be paid for such locations, where such merchants depend for their trade upon the drop-in patrons attracted to the locality by the extensive advertising of the big stores.

Definite reasons for this are:

1—Department stores are heavy advertisers, and attract throngs of women who, incidentally, feed the smaller stores near by with customers.

2—Women are natural "shoppers," and while they may be attracted to one particular store by an advertisement, they may visit many shops before making a purchase. The original advertiser sells only a small proportion of those definitely attracted by his offerings, neighboring shops getting a share of business.

3—Specialty shops are often operated in chains, with a location

in each city of importance. These chain stores do relatively little advertising, depending upon special prices and the superior attractiveness of goods displayed to lure in many who perhaps came to visit the larger stores.

Five and ten cent stores will pay what appear to be excessively high rentals to be able to do business in the very heart of such a district. Discover where the three or four larger five and ten cent stores are located in a city, and you will be very near the peak of real estate values, where highest store rentals are paid.

These classes of business—department stores, specialty shops selling women's apparel, and five and ten cent stores—monopolize the greater part of the modern city's so-called "gold strip." The department stores do not seek to be near one another as much as do the other two classes. Even five and ten cent stores offer keen competition with one another, and customers will shop in each store until they get what they want at prices which satisfy them.

Automobile show rooms, tire and accessory stores group in a selected neighborhood for somewhat different reasons. Men prefer convenience. Women are the "bargain hunters." In many cities "automobile row" is found on the main street just at the edge of the high grade business district, where rents are lower, but where men are able to drop in coming down in the morning, or on their way home in the late afternoon. Few high grade cars are to be found in showrooms leading out to wholesale market or factory districts.

Men's shops, displaying clothing, shoes and haberdashery for sale, are often found in groups. Men know rather definitely what they are seeking when they go shopping, and if the article cannot be obtained in one place, it is easy to slip into another store nearby and purchase something to their liking.

Stores operating on the installment plan, selling clothing and jewelry, gravitate in considerable numbers to a district where great crowds of people frequent the sidewalks during shopping hours. Such stores cater to the masses rather than class. Back of it all as the cause is the instinctive desire of nearly everybody to do a little shopping before buying.

Rapid progress in the invention and use of electrical and mechanical household apparatus has witnessed the development of trade colonies in most cities where are displayed washing machines, ironers, dishwashers, vacuum cleaners, and similar contrivances. Women shoppers like to wander through such exhibits, and examine the

relative merits of the different machines before purchasing. Dealers are aware of this tendency and establish their shops close together to enjoy as large a patronage as possible, each profiting by the advertising of others in similar businesses.

Quite frequently several furniture stores find it advantageous to be near together. Furniture is usually purchased more deliberately and after more extensive shopping than usual in other less costly merchandise. Dealers by their advertising attract patrons not alone for their establishments but nearly as much for their competitors. Each store gets its quota of buyers, and more business is done than if the stores were long distances apart.

Another type of business that centers in special districts is that of office equipment and supplies. This embraces dealers in office furniture, both wood and metal, all makes of typewriters, adding and calculating machines of different makes, and safe dealers. Often several stores handling used office devices will be found nearby. Sometimes from a dozen to a score of such stores will be found in a block or two of a large city, close to downtown office buildings. Such locations are selected not only because of convenience for the patrons, who are chiefly officed in nearby buildings, but also in order to furnish quick deliveries of rush orders.

Paint and wallpaper dealers group in sections near to studios of artists and decorators, who make a business of decorating large homes and commercial buildings, churches and similar structures.

Stores selling pianos, radios, phonographs and other musical instruments, as well as all forms of sheet music, are often located in close proximity. Near a Catholic cathedral will sometimes be found one or more stores dealing in ecclesiastical goods.

Art and antique stores are usually found grouped upon the outskirts of the high grade shopping districts, while it is not uncommon for a number of retail jewelers to seek out neighboring locations in the heart of the peak value section. Almost every city has its radio center, where a customer may see all of the latest models. Nearby, may be found a number of hardware stores where mechanics may shop from one to another until they get the exact tool or machine they want.

Even pawnbrokers, and those engaged in the buying and selling of second hand clothing, locate in colonies in a district frequented by the foreign element and the laboring class in search of cheap mer-

chandise. Every large market district has these satellite businesses feeding on the people drawn by low prices.

From fierce competition business men have turned more to co-operation than formerly. Competition still exists, and often it is decidedly keen, but a business man now realizes that the presence of a competitor nearby does not mean that patrons will not be attracted, providing proper service is given, and prices are in line with those of other dealers.

Merchants, however, are not the only ones who have something to sell. There are those engaged in selling their services to the public. Buildings occupied solely by doctors or dentists now exist in most of the larger cities. These structures are especially adapted to their needs, with electrical and plumbing equipment to meet the requirements of the medical and dental practitioners. Operating and rest rooms are provided which may be rented on a nominal basis. Professional men sometimes have difficulty in securing suitable quarters, as some office buildings do not care to have patients passing through halls and elevators. Odors are likewise objected to, so these special buildings fill a real need. In nearly every such building may be found two allied businesses—a drug store and a surgical supply store. Frequently a service restaurant provides the numerous tenants and others with quick lunches.

Lawyers in many cities congregate in special sections, usually in office buildings near public structures such as court houses and city halls. They find it convenient to be near the courts, where, in addition to other facilities, law libraries are maintained in common for reference purposes. Ground floor locations in such buildings in some cities are given over to abstract and title guarantee companies. It is not infrequent to see all of such companies occupying locations in close proximity. Publishers and representatives of law book concerns may be found in or near such buildings.

Ticket offices, travel and steamship agencies, where transportation on steam railroads, busses, steamships and interurban lines may be purchased, are usually to be found in the heart of the office and commercial district, convenient not only to the shopping center, but also to the business man officing in the skyscraper. During the Great War, the United States railroad administration required the railroads to maintain consolidated central ticket offices, but they have since separated into individual units in many of the larger cities. Here a traveler is able to get first hand information direct from repre-

sentatives of the lines he expects to patronize, and obtain complete transportation, whether his trip is to the nearby village, or around the world.

Hotels and rooming houses will be found in groups within easy access of railroad stations. About the Grand Central Depot of the New York Central lines in New York will be found a score of hotels of all kinds. Nearly every big railroad terminal in the coun-



MOVING PICTURE THEATERS CLUSTER IN DISTRICTS

Moving picture theater promoters do not fear having places of amusement in close proximity. In fact, they favor the practice. At night the mass of illumination from signs attracts the whole town to their buildings. Here is Curtis Street, Denver, where many of the movie houses of that city are located.

try is a magnet for hotels, where travelers may secure any class of accommodation they desire.

Theater districts are common to most cities. The so-called legitimate theaters may be found near each other, while it is a more common practice for the "movies" to be found in separate districts.

New York's theater district is famous. Cleveland has its "Playhouse Square." Denver has a street lined for several blocks on each side with brightly illuminated movie theaters. A section of State Street in Chicago is likewise noted for its moving picture houses.

Years ago banks appreciated the necessity for segregating their institutions into special sections. Wall Street in New York is perhaps the best known financial district. Chicago has its LaSalle Street, Detroit its Griswold Street, and Los Angeles its Spring Street, all well known, with scores of similar groupings in other cities throughout both the United States and Canada. Messengers and patrons may slip from one institution to another with little time or trouble. Streets are patrolled by specially trained city detectives and private guards, furnishing protection of a kind not afforded in other sections.

In some cities real estate firms have definite districts in which many firms will be found represented with ground floor locations or offices in buildings close by.

Rival bus companies feel the necessity for establishing connections in cities, and join in operating bus terminals much as do the railroads. Here transfers from one line to another may be made, although the same building may not house them all.

Art colonies develop naturally from the inclination of students to be together. Paris has its Latin Quarter, and New York its Greenwich Village. Almost every large city has a section or several buildings close to each other housing such activities.

Another instance of concentration of businesses is found in the wholesale and manufacturing activities of a city. The wholesale section of almost every city will find its distinct groups of allied lines. Wholesale grocers will often be found close to each other. A district will be given over to jobbers in iron, steel and other metals. Cigar and tobacco jobbers will be found lining another section of an avenue. Entire districts will be devoted, in some instances, to the printing trades. Here may be found printers catering to all classes of business, with wholesale paper merchants and type founders nearby. Not infrequently agents selling printing machinery, binding materials, and other printing equipment will be located in the same section.

Jobbers and manufacturers of wearing apparel colonize. The congregating of the needle trades on lower Fifth Avenue, New York, prior to 1916 led to their ultimate banishment by virtue of

the passing of New York's zoning law, the first one to be enacted in this country. Now the district is located on Fourth Avenue in the upper thirties. Cleveland has a large district given over to the garment trade. Several of the larger cities have "fur centers," where manufacturers and jobbers operate together. Other groups are those devoted to the sale of lace, gloves, shoes and millinery, with importers of those and allied lines close by.

Chicago has a unique building known as the Furniture Mart, where representatives of scores of furniture manufacturers and jobbers have their headquarters. Doubtless other cities will follow with special buildings designed for the accommodation of manufacturers and wholesalers of merchandise of particular lines requiring large areas for display purposes. Here retailers may purchase an entire season's requirements from many manufacturers without stepping outside of a building.

Produce dealers invariably congregate in districts where grocers, hotel and restaurant stewards and owners come in the early morning hours to make their daily purchases. The jobber who is not in such a district stands a slim chance of getting much wholesale market business, unless he operates in an exceptional manner.

It is not unusual to find a number of manufacturers in allied lines located in a general district, where labor may pass from one plant to another. Two or three plants at the beginning of the twentieth century that were making carriages developed into automobile factories. More concerns were attracted by the ability to secure skilled labor, and in this way distinct automobile manufacturing districts have developed in several cities.

This inclination to group businesses in districts is not new. London for centuries has had its street given over to diamond merchants, and its Inns of Court where barristers and solicitors are officed. Many European and Asiatic cities may be found with districts devoted to the accommodation of merchants dealing in special types of merchandise.

The tendency is just beginning in America, and in the future this practice of business grouping is likely to increase rather than diminish. Competition fosters trade, and this principle is coming to be recognized more and more by business men. "Comparison sales" conducted by big department stores invite the shopper to look around and compare values. Some merchants advertise prices as "low as the lowest," and an article on sale in one store at a special price may be

purchased for the same price on the same day at the shop of a competitor.

Those engaged in the distribution of goods realize that the important thing in merchandising is *to get the people to the store*. If this can be done, trade will naturally result. One way to accomplish this is to locate in proximity to establishments in the same line of business, whether it be retail or wholesale. Trade and shopping centers are further promoted by the automobile as a transportation factor. The customer driving to a district to shop for certain merchandise because of convenience alone seeks those establishments nearest to parking space. Leisurely shopping is a relic of the past. The age of hurry, rush and bustle permeates retail and wholesale merchandising as it does all other activities.

Review

1—What motive prompts businesses to group in special districts?

2—Name four general classes to which this applies.

3—How large must a city be before this becomes apparent?

4—Name some types of women's stores which have interests in common in this respect.

5—What three classes of merchants monopolize the "100 per cent district" of a city?

6—Why do specialty stores like to be near each other?

7—What class of stores seeks the district enjoying peak values?

8—Give three reasons why women patronize such districts.

9—Where do automobile agencies like to locate?

10—What advantage do furniture stores find in being in the same neighborhood?

11—Name several lines occupying a district given over to the sale of office devices.

12—What has happened to ticket offices since the close of the Great War?

13—Name several noted theater districts and cities where they are located.

14—What is the modern business man's belief concerning competition and co-operation?

15—State the advantages of doctors, dentists and lawyers grouping in buildings maintained for their specific use.

16—Give instances of several financial districts.

17—Name two world famous art colonies.

18—Name the types of businesses to be found in a wholesale district given over to the sale and manufacture of women's wearing apparel.

19—Name a building in Chicago given over to a specific business.

20—Why do manufacturers find it advantageous to be in districts where allied lines are located?



PROPER UTILIZATION OF STREET FRONTAGE

This store, erected on a location where peak land values exist in Cleveland, illustrates a new type of retail construction. It is supported by pillars at each side on the street frontage. Two large central pillars are set back ten feet, and the entire show window space is cantilevered out so that every inch of the frontage is used, either for display or entrance purposes. The two set back pillars may be plainly seen in the rear of the center windows. \$80,000 worth of land is being used for display purposes instead of storage of steel columns.

CHAPTER 21.

CHAIN STORES AS A TYPE OF TENANCY

History of chain store development—Over 10,000 chains in operation in the United States—Types of business represented—Cause of growth—Methods followed—Advantages of operation—Basis of rentals—Shopping practices—Chain stores have raised rentals and increased land values—Future of department stores and mail order houses.

Chain stores have, in recent years, revolutionized the character of tenancy and earning power of land located in central business districts in American cities.

While the idea of chain stores is not new, their remarkable development in recent years has been one of the wonders of the business age. Operation of chain stores is simply a manifestation of mass production and mass selling, which has captivated the imagination and energies of American business men since the close of the Great War.

Until a community has gained a population of at least 10,000 or 15,000, chain store operators, other than those handling groceries, seldom take much interest in it. Then, however, a representative of a chain will select a prominent location, negotiate a lease for a store, and establish one of hundreds of branches conducted by the organization sponsoring it. Rental conditions are immediately stimulated, and the town becomes attractive for other stores of the same type of operation. As the community grows, so do the number of chain stores, which often vie with each other in paying top rentals for strategic locations. Chain store merchandising has revolutionized retail business in many cities, and has literally driven out of existence many old time single store merchants.

Chain store merchandising is said to have started first in China some 200 years before Christ, when a Chinese merchant, Lo Koss, is reported to have established a number of stores at different points throughout the Celestial Empire.

What is probably the oldest chain store system in America is the Hudson Bay Co., operating almost entirely in Canada. Launched by two French Canadian freetrading adventurers, Medard Groseilliers and Pierre Radisson, it developed into an ambitious enterprise, and a charter was granted it on May 2, 1670. Today it maintains

large stores in many important Canadian cities, the largest occupying a building costing over \$6,000,000 at Winnipeg, the headquarters of the company. It has five wholesale establishments and operates over two hundred trading posts in northern Canada, eighteen of which are within the Arctic Circle. It maintains fifty-eight steam and motor vessels, and owns 3,000,000 acres of farm and pasture lands in Manitoba, Alberta and Saskatchewan.

There were over 10,000 chain systems in the United States alone, with over 100,000 retail outlets in 1928. Of these about seventy-five grocery chains operate over 50,000 retail stores. It is said that over twelve per cent of all the goods sold at retail throughout the country are bought over the counters of chain stores. When the large department chains are taken into further consideration, probably this estimate is low.

A chain store grocery concern which is represented in hundreds of American cities, started in 1859 with a peddler using a wagon. Gradually, by natural growth and a system of absorption, it now has more than 16,000 grocery stores, of which about 1,000 have meat markets, thirty-one warehouses, sixteen bakeries, eight factories, its own canneries, and a staff of expert buyers in foreign lands. This concern, The Great Atlantic and Pacific Tea Co., seeks to operate a standard sized store, for which fixtures are shipped from central points.

The F. W. Woolworth Co. now has over 1,500 five and ten cent stores in cities throughout the United States, and did a volume of business of \$272,700,000 in 1927. The United Cigar Stores Co., a combination of several smaller groups, has been another striking example of chain store merchandising with its nearly 1,200 stores and 1,800 agencies in operation.

In addition to the commoner types of chains, there are chains of theaters, banks, newspapers, restaurants, dentists, auto accessories, radio, and a host of others. One of the newest is the chain skyscraper, a company having recently been formed for the purpose of supplying progressive cities with new, high grade office buildings.

Not only many large department stores, but hotels as well, have been merged into chains. The largest of these, The United Hotels Co., operates over twenty-five hotels throughout the country, all units having over 200 rooms and many of them having 1,000 or over. Chain hotel operators prefer hotels in a few big cities, and many in smaller towns, where, by expert operation, they are able to almost

monopolize business when competing against the old antiquated hotels to be found in such places.

Changing methods of merchandising have developed many chain store concerns. Almost every large city witnesses examples of this. An old time grocery firm, which started half a century or more ago, finds that it cannot now advantageously conduct its business from one downtown unit. It proceeds to establish branches in outlying sections of the community, and reduces the size of its downtown store, relying on the outlying branches to take care of all of the business in their neighborhoods, which formerly was served at the main store in the central part of the city.

Experts in merchandising are now predicting that stores served almost entirely by automatic selling machinery, supervised by perhaps one person will be occupying small spaces in busy spots in great cities shortly. The first vending machine in America came in 1888, selling gum. Machines are now available for the automatic sale of men's collars, collar buttons, handkerchiefs, perfumes, soaps, toothbrushes, beverages, sandwiches, cigarets and cigars, and just as many other products as a manufacturer or a retailer desires to sell in that way. Intensive selling of this sort may be resorted to extensively in years to come, earning more profits for stores located on expensive land and rented by chain store concerns.

To prevent business extermination through the activities of chain store concerns, many independent merchants handling drugs, groceries, candy, baked goods and many other lines have taken refuge in co-operative buying. Cleveland purveyors of grocery products have formed an association calling themselves "Associated Grocers," decorating their store windows with the large letters "A. G." to let their customers know they enjoy the advantages of combined buying power back of their merchandising. Druggists and others have formed similar combinations, and to some extent seem to have checked the inroads which were being made by powerful and rich chain concerns. Thousands of store owners have watched these battles, for hinging on the success or failure of the contests rests the ability of property owners to collect rentals from tenants engaged in retail businesses. It is impossible to estimate accurately the extent this influence has had in raising land values in many cities, but an analysis of chain store growth in the "gold strips" of important cities shows astonishing conditions created by this bidding of large and wealthy concerns for choice locations,

The outstanding requirements of many chain stores is a location in the very best retail section of a city. The actual amount of rent asked often is of comparatively small consideration, but the relation between the rent charged and the volume of business which can be transacted is vital. The chain store operator proceeds upon the theory that the amount of rent paid depends upon the volume of business done. If a particular kind of business can afford to pay ten per cent of its gross sales as rental, it can readily pay \$20,000 a year for a store so located to produce \$200,000 worth of business, or \$40,000 where \$400,000 worth of goods can be sold annually.

The following table, somewhat revised, taken from Stanley L. McMichael's book, "Long And Short Term Leaseholds," gives a complete schedule of maximum percentages of rents to gross sales which ordinarily can be obtained from chain store operators:

Millinery	10 to 12%	Women's Suits	7 to 8%
Barber Shops	10 to 12%	Cigars	7 to 8%
Florists	10 to 12%	Hotels	7 to 8%
Auto Accessories	10%	Theaters	7 to 8%
Electrical Goods	10%	Drugs	6 to 8%
Haberdashers	10%	Women's Waists	6 to 8%
Furs	10%	Men's Clothing	6 to 8%
Restaurants	8 to 10%	Shoes	6 to 8%
Candy	8 to 10%	Five and Ten Cent Stores ..	5 to 7%
Furniture, Rugs, etc.....	8 to 10%	Pianos and Phonographs.....	6%
Hardware	7 to 9%	Variety Stores	5 to 6%
Men's Hats	7 to 9%	Groceries and Provisions ..	3 to 5%
Credit Clothing	8%	Department Stores	2 to 4%
Jewelry	8%	Teas and Coffee.....	3%
Trunks, Leathergoods	8%	Automobiles	2%

The above percentages have been approved by Stanley K. Green, President, C. F. Noyes Realty Corporation, New York City, J. A. McCormack, chain store manager, Joseph P. Day, Inc., New York, and B. Howard Richards, chain store broker of Baltimore.

Among the advantages of chain store methods are said to be the standardizing of merchandise; the ability to purchase goods in large quantities, which permits a wide range of buying power; standardized equipment and management; cash sales and entire elimination of credits; greater volume of turnover, and consequently lower overhead, these factors combining to make it possible to sell merchandise cheaper.

With the growth of the chain store movement has developed a specialized type of real estate broker, who obtains locations for that class of business exclusively, operating through associated brok-

ers in several hundred cities throughout the country. These scouts spot locations in a city, immediately communicate the fact to the chain store broker, who soon supplies a tenant for the store from a list of concerns he represents.

Chain store competition plays havoc with old time merchants who own single establishments which they are conducting along old time merchandising methods with the result that high grade locations in live, growing cities are now, to a considerable degree, monopolized by the stores of chain syndicates. These concerns can afford often to establish a new branch by offering merchandise which is new and up to date at lower prices than strictly local firms can sell at. This seriously affects the local concerns, but the landlord seeking to sell his location to the highest bidder sees new peaks of value established, and the whole town notes the reflection of higher rentals paid in the increase in land values.

Chain stores are of two general types, advertising and non-advertising. The big advertisers are concerns in the department store field, the grocery field and those dealing in women's ready to wear apparel. The J. C. Penney Co., operating 1,000 department stores, spends \$2,000,000 per year in advertising. The list descends to the chain cigar store, which advertises but little.

Stores handling goods for women can pay the highest rentals, sometimes from twenty to thirty per cent greater than other lines. Competition compels other kinds of chain stores to pay as much rent as locations justify.

Retail shopping districts where chain stores are to be found in greatest numbers experience their maximum retail business from eleven o'clock in the morning until three or four o'clock in the afternoon. Traffic counts in the larger cities prove that the heaviest pedestrian traffic is always at the noon hour when shoppers are reenforced by clerks and workers from downtown offices and business establishments flocking out upon a street for their noon airing.

A study conducted in 1927 by the Domestic Distribution Division of the United States Chamber of Commerce reveals interesting facts as to the time of day different types of merchants do most of their business. It was found that in cities of a population between 2,500 and 10,000, 32% of the merchants' sales occurred before eleven in the morning, 8% between eleven and three, and 60% from three until closing time. In cities of from 10,000 to 50,000 population, this situation was still further accentuated, 72% of the day's sales

occurring after three, and only 15% before eleven, and 13% between eleven and three. It was only in the large cities with a population of from 50,000 to 200,000 that a tendency toward midday shopping became evident. In cities of this size only 2% of the shopping was done before eleven, and only 47% from three on, the bulk of the shopping, 51%, occurring between eleven and three. In cities of over 200,000 71% of the day's business was done between eleven and three, only 4% before eleven, and 25% after three in the afternoon.

Large chain store concerns maintain a practice, which is constantly increasing, of retaining experts to study their businesses and devise methods for improving trade. Many employ men to do nothing but analyze proposed locations, spending days "clocking" pedestrian traffic in a city, separating the women from the men in counts which are made. An investigator will estimate that if a certain number of women pass a location every day, a definite proportion will enter and buy. Thus will be established a preliminary study of the volume of sales on which, according to the foregoing table of maximum rents to gross sales, a possible rental that can be paid is estimated.

The character of the shopping population usually determines whether a city is a "men's," or a "women's" town. Certain cities like Akron, Bridgeport, Gary and Pittsburgh are known as "men's" towns, because the industries there chiefly employ men. In Troy, Paterson, and Fall River the great industries employ women. This has an affect on the character of the shops which fill the retail business center as they cater to the class of shoppers chiefly predominating.

Chain cigar stores are able to use small areas. They will rent a little "bite" out of a big corner store, suspend fixtures from ceilings, and do a thriving business in a space as small as 100 square feet. The larger users of space are the women's stores, and the five and ten cent stores. The standard requirement of the latter is a fifty foot front, 150 feet deep, fifteen foot ceilings, and a usable basement. Sometimes the five and ten cent stores will use second floors advantageously.

Chain stores are slow to leave proven locations. What is done, sometimes, is to secure control of a choice site in a new district which is "coming" in four or five years or even longer. They will remain at an old location for that time, rent the new one to a tenant willing

to pioneer in the district until it ripens sufficiently for the volume of trade desired, and then move into the new section as it, too, assumes big business possibilities. Because of this fact, it is often found that chain stores will negotiate rentals on which possession is given years after the signing of the leases. These leases, which are based often upon speculative values, are recognized as barometers of the future possibilities of a section, and help establish new land values in the locations where they are taken.

Only a few of the chain store concerns attempt nation wide distribution. Usually a few cities or states are selected in which to operate, and other territories are left for competitors. This is due, in part, to the location of their base of supplies, for most of the chain stores are selling agencies for self owned manufacturing enterprises, and in these days of high freight rates there is a distance limit to which shipments of goods profitably can be made.

Chain stores often are of a purely local character. These are notably drug, candy and grocery stores, which center in one large city, and do not seem to care to expand beyond its limits. Five and ten cent stores, wearing apparel concerns, shoe and cigar stores are among those found engaged in national distribution of their products.

Store space on streets in certain of the large cities has become so much in demand, and such high rentals are being paid that every inch seems worth a fortune. Heavy stone or brick pillars and steel beams will be shaved down at great expense to give a few more inches of valuable display space for which some storekeeper will pay rent. Entrances to upper floors will be relocated or abandoned to secure five or six feet more of store front on a business street, and the second floor of a building rented at a low figure or abandoned so the ground area can be made to earn every possible dollar. Perhaps no more intensive use of space is to be found than in districts like these where rentals seemingly at a maximum one year increase with new leases to be closed the next year.

The way the chain store idea is permeating American business is indicated in the consolidation of large department stores into groups, beginning about 1920. Edward A. Filene, president of one of Boston's biggest department stores, recently recounted what is happening, with a warning that the department store which is not contemplating getting into some chain is taking a risk that may later cause it trouble. Mr. Filene in February, 1927, gave the following examples to show the progress of the movement:

"R. H. Macy & Co., which sold over \$70,000,000 in their New York store alone in 1926, also own or control the stores of LaSalle & Koch, Toledo, and Davison-Paxon-Stokes, Atlanta. The May Department Stores now number five. Gimbel Brothers have great department stores in New York, Philadelphia and Milwaukee, and own or control the two large Saks stores in New York and Kaufmann & Baer, in Pittsburgh. The National Department Stores chain numbered fifteen stores in 1925. The Associated Dry Goods Corporation owns the following department stores: James McCreery Co., New York; Hahne & Co., Newark; Stewart & Co., Baltimore; Wm. Hengerer Co., Buffalo; Powers Mercantile Co., Minneapolis; J. N. Adam & Co., Buffalo; Stewart Dry Goods Co., Louisville, and controls under part ownership, C. C. G. Gunther's Sons and Lord & Taylor in New York.

"On the Pacific Coast, B. F. Schlesinger & Sons, Inc., own department stores in Oakland, Portland and Tacoma; and Hale Brothers Stores, Inc., a group of five department stores in San Francisco, San Jose, Oakland and Los Angeles. In the Middle West, Scruggs-Vandervoort-Barney, of St. Louis, have acquired the S. L. White Co. store in Columbus, Ohio, and the Denver Dry Goods Company in Denver. In the south, the City Stores Company has taken over three large well known stores in Birmingham, New Orleans and Memphis.

"Just as the department store outdid the individual small store, so for the same reasons the chains of department stores will overshadow the present chains," Mr. Filene said. "This is clear, because the department store chain will have the same advantages over the small store chain that the single department store has over the individual small store. At present this movement into department store chains is only at its very beginning, and has not anywhere near reached its full growth in power. The chain stores can buy at least as cheaply as the department stores, perhaps more cheaply, and do business at less cost than the department store as at present organized; and if the department store owners should be blind to what is happening—which they are not, although rather slow to face it definitely—then the time will come in the near future when the chain stores will come together and occupy department store buildings. While preserving their individuality, they will combine their power, just as the fruit growers of the Pacific Coast have done so successfully. And thus they will add to their present great power all the other powers that the department store now possesses."

Another evidence of chain store expansion has been noted in the activities of the large mail order concerns of Sears, Roebuck & Co., and Montgomery, Ward & Co. Curiously enough, this action was forced on these mail order houses by encroachment on their business by chain stores. While in keen competition with each other, they realized that the big department store chains were also their competitors, so they began to attack the department and other chain stores in their own fields—the big cities of the country. Huge retail stores were first opened in several western cities, and later in eastern cities. Eventually they expect to have representation in every large city in the country. Mr. Filene, quoted heretofore, expresses the opinion “within ten years the leading mail order houses will be doing more business through these retail stores than they are doing by mail order now and in addition will be doing more mail order business also than they are doing at present.”

Review

- 1—Outline development of chain store idea in recent years.
- 2—How large must a city be to attract chain stores?
- 3—Give history of early chain store merchandising.
- 4—How many chain store systems operate in America?
- 5—What commodities are most extensively sold in chain stores?
- 6—Give a number of types of chain store enterprises.
- 7—How have independent stores combined to fight invasion of chain stores?
- 8—Where do chain stores usually seek to locate?
- 9—Wherein do food purveying chain stores differ?
- 10—Name some of the percentages which chain stores of various types will pay as rent on gross sales.
- 11—What type of chain stores can pay the highest rentals?
- 12—At what time of the day do customers patronize stores most?
- 13—How do chain store experts analyze store locations?
- 14—State requirements of the following chain stores: cigars, five and ten cent goods.
- 15—Name a few types of “local” chain stores.
- 16—What tendency are department stores showing towards the “chain” idea?
- 17—What are the elements that make chain store merchandising profitable?
- 18—What are mail order houses doing to obtain retail distribution?



WIDENING CITY STREETS BY MEANS OF ARCADES

Where existing business thoroughfares cannot be widened without almost prohibitive expense, this plan may be effective. Stores are set back twenty feet, and the lower portions of buildings are converted into arcades, thus allowing the full width of the street itself for the use of vehicular traffic.

CHAPTER 22.

EFFECT OF CERTAIN INFLUENCES UPON RETAIL BUSINESS DISTRICTS

Use of electricity revolutionizes business practice—Street widths important—One sided streets—Streets ending at water barriers—Traits of pedestrians—Day versus night traffic—Sidewalk congestion.

Many factors, some relatively unimportant in themselves, are closely identified with the development of a modern city. Why is one favorably impressed with a retail section in one part of a city, and perhaps repelled by that to be found in another locality of the same community? Why does one like to visit one and shun another? Why, in the parlance of the chain store operator, is one community known as a "good shopping town," and another considered otherwise?

Certain influences, other than any previously discussed, operate to direct, stimulate or obstruct internal growth and expansion in cities. The use or avoidance of certain business practices may attract or repel other businesses. The presence in a district of a city of certain unfavorable elements may doom it, for the time being at least, from becoming a popular shopping locality.

A barrier may be created which will operate to change a city street from the use to which for years it has been put to another entirely different in character. These forces are to be here considered. Necessarily this discussion is in the nature of a collation of observations which are familiar to many city dwellers.

Man's discovery of the secret of shackling the sunshine, and distributing widespread, at small expense, the mysterious force known as electricity has worked wonders in the modernizing of cities, and particularly in making more attractive their centers of retail trade. While the improvement of internal combustion engines has revolutionized transportation, and had its attendant effects on city growth and land values, electricity has done much to modernize retail business establishments. Electric illumination, in addition to furnishing a twenty-four hour workday, has been a boon to business of all kinds. Particularly has it been utilized in retail business places until one of the most important features of a store now is its electrical equipment,

Many shops of a generation or two ago were dingy, dark places, compared to those of today. They were necessarily small because of the lack of illumination other than by means of oil lamps and flickering gas jets. Now, great areas of inside space, often far removed from the street frontages, are utilized to their highest degree by means of devices which broadcast manufactured daylight. A department store may be acres in extent, and yet be as bright and cheerful as if served by myriads of windows through which the sun pours its rays. This facility has added immense value to land because of the possibilities of more extended utilization.

Land now used as a site for a great store often is valued on a square foot basis rather than having its worth estimated in street frontage units. This is due largely to increased utility of inside and off street or back areas on account of electric illumination. Land several hundred feet back from the street line may be just as valuable for retail display purposes as that a step within the front door of an establishment. Thus again has modern ingenuity added to the value of business locations.

Before the advent of electricity, the woman shopper on a winter afternoon hurried home early because there was little to see after the sun began to decline. Now shopping may be continued late into the evening if one so desires. The range of time available for shopping purposes has been doubled, and the element of convenience greatly enhanced. This means that a merchant can do more business during a season, and consequently add to his profits. It reflects in his ability to pay higher rent, thus enhancing land values.

On late afternoons, and during evenings, the electrical illuminations to be found in business districts prove especially attractive. Animated signs flutter their messages on every side. White way lighting systems make thoroughfares almost as bright as high noon. Effect of artistic window trims are heightened, and merchandise is displayed in such an alluring manner that sales are increased. The value of electricity in the conduct of retail business is perhaps not fully appreciated by property owners. Capitalized, it is worth many millions of dollars annually to any city in attracting shoppers to the metropolitan stores, from sections many miles beyond the corporate boundaries. Thus employment is furnished to greater numbers who must seek residence in the city area—so electricity has become a real impetus to city growth.

While the use of electricity in all of its wonderful forms has been distinctly favorable in character, there are other influences which have a more or less detrimental effect upon city growth, particularly in business districts. Unusually wide streets are difficult for pedestrians to cross from side to side, and, although beneficial in handling increasing automobile traffic, operate as a distinct detriment to sub-



(C) Ewing Galloway.

HOW NEW YORK SOLVES A ONE-SIDED STREET PROBLEM

Important business thoroughfares sometimes suddenly encounter a park, as does Fifth Avenue in New York. It is found that retail business will not readily patronize a one-sided thoroughfare. Stately mansions which formerly faced Central Park are fast passing away, and fine residential hotels and palatial apartments are being built in their stead.

stantial real estate values. Pedestrians avoid crossing unnecessarily wide streets. Thoroughfares like Canal St. in New Orleans, Market St. in San Francisco, Superior Ave. in Cleveland, upper Broadway in New York and Woodward Ave. in Detroit, all show this influence in a marked degree.

Locations where two wide streets intersect, forming an acute angle, thus causing a street crossing on a bias, are often shunned, particularly by women who hesitate to venture across these dangerous intersections. In some large cities, such crossings are now protected by rows of traffic standards, so that vehicles may only pass through small gaps at moderate speed. Retail sections for a distance of from 100 to 300 feet beyond such intersections experience a decided falling off in pedestrian traffic, because of such adverse conditions.

One sided streets, so called, are avoided by the experienced and enterprising merchant as a place in which to locate a large store. Where public buildings, and parks monopolize one side of a street, stores can exist only on the side opposite them. Shoppers prefer trading in stores on streets where important establishments are located on both sides.

Likewise, the breaking of a main business street by reason of its passing through a park, as does Woodward Ave. in Detroit at Grand Circus Park, has a definite effect on checking buying traffic. It was many years before stores broke over the barrier in Detroit, and even today with a fine shopping district and high land values in existence on lower Woodward Ave., there are few pretentious stores north of Grand Circus Park. It is a barrier which definitely retards the northward trend of Detroit's high grade retail business.

Michigan Ave., in the downtown section of Chicago, is a one sided street, with Grant Park opposite it, and it is significant that there are no large retail stores there, the section being given over to exclusive shops, while State Street attracts heavy throngs of buying traffic, where the largest stores are located.

Likewise in Cleveland, where the Public Square exists, it took years for business to jump that barrier and start out Euclid Ave. The north side of Superior Avenue in Cleveland, from the Public Square to East 9th St., is given over chiefly to monumental buildings, with the result that there are no important retail establishments on the south side of the street. This is further aggravated by the fact that Superior Avenue is 132 feet in width—too wide for a good retail business thoroughfare.

Pennsylvania Avenue in Washington is too wide to attract big business establishments which have located elsewhere in the capitol city. Perhaps the one exception is Canal Street in New Orleans, where large stores do exist on both sides, but the reason is that Canal Street always has been the main business thoroughfare of the

southern metropolis. The stores, however, are distinct in character, and cater to the needs of buyers who live back of them, and who do not have to cross the wide thoroughfare. San Francisco's Market Street has one or two large retail establishments on it, but it is significant that the highest grade stores are in another location where narrower streets prevail.

Steep inclines in streets will immediately check a flow of foot travel, and make it difficult for retail shops to exist. In Seattle, San Francisco, Los Angeles, and Duluth, this is particularly noticeable, for there is much hilly land close to the downtown business districts. Shoppers avoid exerting themselves by climbing a hill, but will take the easiest line of travel, even to abruptly turning corners to do so.

Streets bordering lakes and rivers seldom develop into great retail centers, for people prefer to trade in built up retail business sections. Cemeteries are a barrier to the expansion of retail business sections and shoppers dislike their proximity. Even in a city as densely populated as New York, the only neighbors of the two small historic cemeteries on lower Broadway are towering office buildings. Churches, schools, banks, public libraries, theaters, and similar institutions are also considered poor company for high grade retail business of any kind.

Street car lines emerging from tunnels in the center of highways have a distinctly deterring influence on business. The wide gaping entrances are far from attractive, are noisy when cars are passing in or out and are often dangerous to traffic. Only small secondary shops exist in such a neighborhood.

Elevated railways have a depressing effect on retail business. Cars roaring along great raised trestles of steel are not conducive to comfortable shopping. Witness Wabash Ave., and other thoroughfares in Chicago which attract only mediocre business. The same is true in New York and Boston on avenues where elevated lines exist. It is evident that elevated systems will never gain favor in American cities, despite their pressing needs for rapid transit. The depressing effect on land values of such railway systems is recognized at law, and damages were accorded to property owners along such rights of way when the lines were originally constructed.

Streets which have their growth suddenly checked by railroad terminals, boat landings, or lakes, seldom see retail business develop in such directions. In San Francisco, with its great ferry landing, at the foot of Market Street, there is a distinct tendency for busi-



AN ATTRACTIVE SUBWAY ENTRANCE

When Boston was building its subways it was found necessary to pass from the ground to the lower subway level at a point on Boylston Street opposite the Public Gardens. To do so the street was substantially widened and an entrance created which does not obstruct traffic, nor look unsightly. Boston was the first city in America to build a subway.

ness to grow away from it, and for a number of blocks near the ferry landing only small second grade shops are to be found. Denver has its Seventeenth Street, which ends abruptly at a union railroad station, but only small establishments exist in its proximity, high grade growth being in the opposite direction. Broadway in New York ends at the Battery, but what merchant would think of going anywhere on lower Broadway to open a large store? Woodward Avenue in Detroit ends at the river, with not a sizable shop in sight. Yonge Street in Toronto, Canada, is in the same plight, all of its development being in the opposite direction. The inclination for expansion is nearly always *away from the point of original settlement*, and out towards new, high grade residential districts, again emphasizing a prevailing trend of city growth.

The popularity and growth of retail districts in cities are frequently affected by traits of pedestrians, who are exceedingly sensitive to unusual conditions. They shun certain districts or places where something has occurred, or is likely to occur, to cause them displeasure, discomfort or inconvenience. Absence of pedestrians thus driven away affects rentals, and, ultimately, is reflected in lower values of land.

In former years architects of store buildings often designed entrances so that customers had to mount one or more steps in going into retail establishments. Building managers today find that merchants demand street level entrances, and many thousands of dollars are being spent in eliminating unnecessary grades. The research director for a large eastern retail store has established, to his own satisfaction at least, the fact that a pedestrian entering a store will go down two or more steps more readily than he will climb up one. The owner of one large store on a sloping street eliminated several steps entering his building and installed short ramps after which time shoppers used that entrance more frequently.

Temporary protective structures are frequently erected by contractors over sidewalks to permit safer building construction on abutting land. Actual counts taken indicate a marked falling off and disturbance of foot travel while these temporary affairs are allowed to stand. Stairways to upper stories and basements encroaching on sidewalks are likewise objectionable to pedestrians, and are now practically unknown in progressive business districts. News or fruit stands blocking sidewalks are detrimental to adja-



ERECTED IN THE "STONE QUARRY" ARCHITECTURAL ERA

Twenty or more years ago, architects of bank buildings considered it necessary to erect great monoliths of granite at the front entrances to financial institutions. Huge pillars thirty feet high, weighing many tons, were upended in front of this one. On the opposite page may be seen the same building remodeled for business purposes, the structure having been sold by the bank, which built another home for its activities.

cent property values, although many persons may congregate around them.

In some cities pedestrian traffic at certain points becomes so dense that it overflows into roadways. Sidewalks become congested with a veritable tide of human traffic, and pedestrians find serious trouble in breasting it. Traffic overflow of this character is illustrated by conditions existing at noon hours on Broad, Wall, and William Streets in New York City; at State and Madison Streets, Chicago; at Broadway and Seventh Streets, Los Angeles; and E. 6th and E. 4th Streets and Euclid Avenue in Cleveland.

Inhabitants of a city do not intermingle at random, but go from



BANK TRANSFORMED INTO BUSINESS BLOCK

This shows the lower floors of the same building pictured on the opposite page as redesigned for retail business purposes. The former tenant in erecting a new banking home placed small shops on the street frontage.

one place to another by the shortest, most agreeable, and quickest route. In New Orleans, many Creoles seldom cross Canal Street into the American quarter. New Yorkers of the upper classes avoid the East Side, while those living in that famous quarter are comparatively unfamiliar with upper Broadway, Fifth Avenue, and the theater and high grade shopping districts. Similar conditions surround the daily movements of thousands in America's metropolitan cities,

which as a result become sectionalized. This condition was particularly true before the advent of the automobile. The development of the low priced motor car has broadened the explorations of many millions of city dwellers, so that gradually there is less localism, and more universality in the meanderings of city residents. Nevertheless, pedestrians seek the quickest and most direct route when going somewhere. To satisfy this human characteristic, arcades are constructed connecting parallel streets. Even new streets are opened to traffic, sometimes at enormous expense over high priced land. Not infrequently large department stores seek double frontages on parallel streets in order to accommodate pedestrians and benefit by the foot traffic passing through the stores.

One authority compares pedestrian traffic to a stream flowing down a watercourse. Obstructions check it and turn it aside. It is remarkable how fluid the daily travel on city streets is, and the closeness within which it seeks its own level. Like water, the stream of traffic in flowing down a street will back into cross streets, favorably influencing store locations to a distance proportionate to the strength of the current, and establishing what is known to real estate owners and operators as "corner influence." This may be briefly defined as the additional value given to a site situated at the intersection of two or more business streets, due to the confluence of the streams of traffic established thereby.

Special occasions affect traffic materially. A city popular for conventions, will frequently have a floating population of strangers, who crowd the streets and add to the business of certain types of shops and stores. Americans are fond of congregating in conventions of all kinds, and scarcely an American city of any size or importance fails to cater to their convenience. The main effect of these daily currents of travel is on the retail stores. Increasing traffic, both vehicular and pedestrian, is certain to ultimately change any street into a shopping thoroughfare unless there are restrictions against business uses. Merchants seek to locate where their window displays may be seen by great numbers of passersby and trade thereby attracted.

It is also true that the growth of new residential districts is certain to change the route of principal travel within a city, which will tend to draw shops and retail establishments to the street which is the axis of the neighborhood, and on the most direct route to the high grade home district from the center of the city. Broadway in New York City is an example of such a transition. Fifth Avenue

in the same city has been developed through such forces. In Cleveland, Carnegie Avenue, and its companion street, Prospect Avenue, are robbing Euclid Avenue of some of its ancient importance, due largely to the new Heights residential development, which requires these streets as vehicular highways.

In river towns marked changes have occurred, due to the relocation of the best residential districts. These were originally laid out for the most part with principal business streets paralleling the rivers. Growth has forced people seeking residences farther and farther from the river, and resulting therefrom, in such cities as Cincinnati, Detroit, St. Louis, St. Joseph, Toledo, Minneapolis and Portland, the principal businesses have deserted the streets paralleling the waterfront to relocate upon avenues at right angles thereto, and tributary to the best residential districts.

As stores follow the shifting currents of travel, rental values move with them, the value of retail land depending, as expressed by one eminent authority on the subject, "on the number of people passing, qualified by their purchasing power, the causes which bring them past the property, and their method of locomotion. This dependence of retail business on daily traffic is due to the operation of the laws of chance, by which, of a given number of passersby, a certain proportion will become customers."

In most cities there is a marked difference between day and night travel. Starting in early morning, workmen leave their homes, and travel on foot, by street car, or by automobile, to their places of employment. Anxious to cover distances as rapidly as possible, the routes selected are the most direct. Short cuts across vacant land are taken by walkers, and every possible method employed to cut distance. Later the office employees and clerks start downtown. Usually the distance is such that some means of transportation other than walking is employed. Business districts draw workers from all points of the compass. Shop workers seek residential locations within convenient distance of where they are employed, but downtown workers find this impossible, due to the high cost of locations near the business districts in which they work. Therefore, most axial travel in a city is that of downtown workers, while crosstown travel is usually made up of shop workers employed at plants in industrial sections of the city.

In the late morning and early afternoon the shoppers enter the retail business districts, and carry on the trade which contributes most to retail rental values. This traffic thins out rapidly after

four o'clock, and gives way to the home traffic of the office and downtown workers, which is completed by six o'clock.

Evening traffic is pleasure seeking. Large stores are closed. Only drug and candy stores, cigar counters, news stands, restaurants and those of similar character remain open. Occasionally a jewelry shop seeks night patronage. This condition is true in the district known as high grade retail.

Quite different is the night business conducted in third or fourth grade districts, and in neighborhood shopping centers. In residential districts inhabited by working classes, the neighborhood store often does its heaviest business at night. Practically all such stores remain open sometimes as late as ten o'clock. The worker, unable to shop during the business day, buys furniture, radios, dry goods, groceries, hardware, shoes and electrical goods, supplying most of his wants from these little shopping centers during the hours after sunset.

Wholesale and manufacturing districts are practically deserted by traffic of all kinds after six o'clock each day. In certain cities street cars serving such districts are rerouted after the close of business hours, and in nearly every city evening schedules of surface cars traveling these localities are curtailed.

In the sections bright with the brilliant lights of the theater signs, a throng bent on relief from the cares of a day are pushing and crowding the theater entrances, and seeking admission to moving picture shows, restaurants, soda grills and dance halls. This type of night travel is not bent upon serious shopping. Department stores could remain open along side of such a stream, and few would enter the doors. Such travel is pleasure seeking. To druggists and confectioners this crowd means success and profits—to other business, evening crowds in such districts mean relatively nothing.

There is another kind of traffic which might be denominated "seasonable." It is exemplified by the stream of pedestrian travel flowing toward docks and boat landings in summer, especially in lake and river cities where navigation is closed in winter. Excursions, ferries, and other forms of water travel are attractive to people in summer, and streets such as E. Ninth Street in Cleveland, which leads to the steamship docks, lower Woodward Avenue in Detroit, Rector Street in New York City, which carries summer travel to and from the Sandy Hook boat, have considerable traffic

for a few months of the year, but carry no value as shopping traffic, because the crowd is either pleasure seeking or in a hurry.

Land values are directly affected by certain practices allowed with, or without, the knowledge of the city authorities. Perhaps the most definite reaction is the reputation certain districts in cities acquire by reason of housing prostitutes, bawdy houses, gambling dens, and, formerly, saloons. Experts called into court to testify as to values of land located in a district bearing a bad reputation insist that the values of the land are materially depressed by such a character of occupancy. Even after a district has been purged of the causes of ill repute, still an evil reputation hangs over it, and deters respectable people from frequenting it for years. Sometimes it is necessary for the rehabilitation of the district that entirely new buildings be constructed. Merchants hesitate to pioneer in sections bearing an unsavory reputation, even though it stands directly in the path of the development of retail business.

A street given over to pawnshops, cheap jewelry shops, and second hand clothing stores, bears a reputation as a low class shopping district, and high grade retail business will but slowly invade such a section. Values are temporarily depressed, landlords are unable to obtain rents commensurate with the relative location of their properties as compared with those on other downtown business streets.

Store room vacancies tend to depress values. A vacant room announces to the world that for some reason it, for the time being at least, is unattractive. Perhaps the rental demanded is too high, or the room may be undesirable for other reasons. Furthermore, it is an unproductive unit contributing nothing to the business of the area in which it is located. There is nothing in the windows to attract shoppers, and often the premises are permitted to become dirty and unkempt. A vacant store is a discouraging influence and operates detrimentally upon values during its vacancy.

So, in general, good or bad business practices not only effect the individual merchant in the success of his business, but reflect favorably or adversely upon others who are located nearby. Likewise, the desirability of the entire district as a high grade retail center is indirectly effected.

Review

1—How has electricity revolutionized conditions in modern stores?

2—How is land valued when it is used as a site for a great department store?

- 3—What effect does a wide street have upon the retail shopper?
- 4—What is the character of retail development upon so called “one sided” streets?
- 5—What occurs when a main business thoroughfare passes through a city park or square?
- 6—Name four very wide main business arteries in American cities.
- 7—What effect has a cemetery on a business street’s growth?
- 8—Are elevated railroad lines beneficial to retail trade? Why?
- 9—What is the character of business on streets which end at water landings?
- 10—Why are street level entrances now demanded by most merchants?
- 11—Why may sidewalk pedestrian traffic prove harmful to retail trade?
- 12—How does pedestrian traffic resemble the flowing of a stream down a watercourse?
- 13—Trace the trend of residential development in typical river cities.
- 14—Why do rental values follow closely shifting currents of travel in retail districts?
- 15—Outline the marked differences between day and night travel in cities.
- 16—What value has so called “seasonable” pedestrian traffic?
- 17—What will be the width of sidewalks required in future heavily traveled retail districts?
- 18—What effect do hills and grades have on pedestrian travel?
- 19—What handicaps do districts with evil reputations suffer from?
- 20—Why do store room vacancies depress land values?

CHAPTER 23.

SHIFTING BUSINESS DISTRICTS

Growth usually away from railroad stations, rivers and harbors—Why business shifts to new districts—How outlying retail districts grow towards each other—Change in location a natural law of growth—When values reach a peak extensive development begins actively elsewhere.

Physical growth in cities comes largely through the changing utility for which land is employed in connection with business and residential occupancy. As the human body changes in looks and character as age proceeds from infancy to youth, later to middle life and then old age, so do cities change distinctly from the time they are founded, proceeding first through the hamlet and village stage, later growing to become towns, which then expand into cities.

Shifting business and residential districts present one of the interesting phenomena of city growth, which results in a variation of land values. Every city of size and importance has witnessed remarkable changes from the time it was a small town. Despite efforts on the part of property owners to retain business in certain districts, changes steadily occur, and, in all probability, will continue in the years to come, regardless of any element of permanency which may attach to present day main business areas of cities.

Changes in the character of utilization of land tends to follow definite principles, which as yet, however, are not well known. If the secret of the growth of business districts in cities were fully revealed many fortunes would be made by farsighted investors who would be able to determine where retail developments would next occur.

There are always evidences, however, of the general direction in which a city is growing and realty operators are constantly studying future conditions, hoping thereby to gain a share of the increased land values.

Growth in a community may be away from a railroad station toward a good agricultural district. In a town built around intersecting main highways it is difficult to ascertain until the place has considerable population on which street the better development will finally come. This is often influenced by the opening of a choice residential district, towards which business development



A CHURCH ENDOWS ITSELF

On Fourth Street, Cincinnati, this church, which formerly owned land fronting on three streets around it, sold off lots, one by one, until it now occupies but a small portion in the center of the original tract. In front, shops were built with an entrance from the street reserved for the church. Gothic architecture was employed to keep the commercial structure in harmony with the sacred edifice itself.

steadily progresses, thereby increasing land values by establishing a main business artery towards it.

While a community is still in the "small town" stage the business district may not change greatly over a period of some years. With industrial expansion, new population pours in, the town gets "growing pains" and starts to expand rapidly. At that time shrewd operators will invest heavily, depending on future increases in land values which are likely to occur on a large scale.

Perhaps the most noted example of changing business districts is to be found in New York where business for a century or more has crept steadily northward on Broadway. The original settlement was in the neighborhood of Broad and Wall streets. Broadway was a highway leading to the north end of Manhattan Island and the farms of early settlers. The city grew and a new business district of importance was established at Broadway and Fourteenth Street. Then it jumped to Twenty-third Street and later pressed its way out to Central Park. Fifth Avenue, once comparatively unimportant as a business thoroughfare, at first merely took the overflow from the main business avenue but later rapidly developed. Enterprising merchants banded together to definitely promote the interests of Fifth Avenue. New retail businesses settled there and today it excels Broadway as a retail street and is perhaps the greatest retail artery in the world.

Los Angeles, the marvel city of the Pacific Coast, perhaps has seen more rapid business changes than any other large city in the country. Thirty years ago, or less, the main business district was located on Spring, Main and Los Angeles Streets, near the Plaza. This section was later deserted by important business enterprises for Broadway between Fourth and Eighth Streets. While this was going on, the south end of the city seemed to offer fine residential possibilities. With the development of Seventh Street towards the ocean to the westward a change took place, however, and business took a right angle turn and proceeded westward along Seventh and paralleling streets towards new high grade residential districts developing between the main business area and the ocean. The trend is still definitely in that direction.

Cleveland has seen four distinct shifts within a century in its business districts, due to the insistent southeasterly growth of the city and the expansion of residential districts in the same direction. What business existed during the first fifteen to twenty-five years of the life of the city was carried on along streets paralleling the

Cuyahoga River and chiefly in the "flats" district located on the banks of the river. The second stage was witnessed when business climbed the hills out of the valley through which the river flowed and started southeastward, toward what was then the distant Public Square. Superior Avenue and the district between the river and the Public Square then continued, for many years, to be the principal retail shopping center of Cleveland. Beginning about 1890, stores began to pioneer in locations east of the Public Square, along Euclid Avenue. Old Erie Street, now E. 9th Street, proved a barrier for some years but finally about 1907 business extended across the street, slowly for a time, and then about 1920 like wild fire, until in 1923 the district from E. 9th Street to E. 18th Street was completely given over to business. In each case the shift was accompanied by the erection of fine, large modern buildings which more adequately and efficiently served the needs of tenants.

Spokane, Wash., illustrates well the shifts occurring in business districts. Riverside Avenue, in 1907, was the city's main business street. Main Street, which parallels Riverside, was a saloon district and seemed then unattractive to business of a higher order. Ten years, however, saw a distinct westerly shift in the business district over to Main Street, a distance of five or six blocks, from what had been the eastern boundary of the old retail business section on Riverside. This shift was due to the relocation of a large retail store which formerly maintained its place of business at Riverside and Washington Streets, and also to the change in the operations of a large railroad system, which bounded the business district on the south.

Portland, Ore., experienced three shifts since its original location on the banks of the Willamette River in 1845. The trend in that city has been away from the banks of the river towards the north. As in so many river cities the early business streets paralleled the river. This section continued in favor for many years and progress in business advance was made along streets running in the same direction as the early main business thoroughfare. It was not until about 1900 that business marched at right angles to the river along Washington Street.

Thirty-five years marked great changes in business districts in Seattle, Wash. The direction in this case, however, has been paralleling the docks bordering the harbor and proceeding northward until today the retail shopping district is on Second Avenue between University and Pike Streets, seven blocks distant from the

district of 1890. What was then the chief retail district has given place to banks and financial houses.

Cincinnati experienced a change in direction of growth similar to that of Portland. Early residents did their shopping on Front and Second Streets, which extended along the north bank of the



(C) Ewing Galloway

HOW NEW YORK HIDES ITS RAILROAD TRACKS

Below this street lie the tracks of the New York Central Railway. This is Park Ave., north of the Grand Central terminal. Before electrification this was an open cut to allow smoke to escape. Then it was covered, and the street is now lined with large palatial apartment houses.

Ohio River. The next shift was up a slight grade to another parallel avenue, Third Street, then up to Fourth and Fifth Streets. Later came growth at right angles to these streets and in a northeasterly direction reaching out towards the fine residential developments of Avondale and Walnut Hills.

What has been the experience of the cities mentioned has been likewise the record of such cities as Chicago, Omaha, and numerous other communities. The trend seems inevitable in a city as it grows larger. It is impossible to prevent the shifting of business centers. The business of a city cannot be limited to one location. As it fills up a district, new locations for retail businesses must be found. The faster the growth of the city, the quicker the changes occur. It is retail business which draws the greatest number of people to a section and stores prosper most that are located where pedestrian traffic is the greatest. As old districts change, due to growth, increase in population, obsolescence of buildings and other factors, traffic follows to the new shopping district and "the old order changeth, yielding place to the new."

The growth of business in a city normally increases the value of the land in the main business district and necessitates an increase of area to accommodate new shops and stores. This force inevitably tends to pull business constantly away from old to new districts where better, more modern and adequate accommodations are obtained. It is doubtful whether the destruction of buildings immediately upon their becoming unfitted for high grade business and the construction of modern buildings would serve to anchor business in one district permanently.

Many cities have witnessed the blossoming forth of new and important business sub-centers at points far removed from the main retail center. These sub-centers are ordinarily upon a main artery of travel leading from the principal retail business district to the local center and beyond. Once established, there is a constant tendency for the intervening area between the principal district and the sub-district to fill up with tributary business establishments, until the entire frontage is lined with stores, thus creating long business streets. A time comes when the downtown and outlying districts are thus merged solidly together. Retail business moves from both ends toward a meeting place. In a few years the entire street will be lined with business places as a result of this growth.

Sometimes a great fire or a public catastrophe is the cause of a change in use. Before the earthquake and fire in San Francisco, Van Ness Street in that city was a high grade residential street. With the rebuilding first came mushroom business growth, later to be superseded by fine permanent business blocks, housing excellent retail establishments and marking the final step in a progressive and beneficial business shift.

Artificial influences will cause the shifting of a business district. Some large public improvement will require a great amount of land, businesses are compelled to move out to make way and have to find new quarters. This migration is purely artificial and is due to causes which are readily recognized.

Shifting of business districts is so closely linked with the constant and normal growth of cities that the determining factors are not readily separable. A successful business in a central district may expand by acquiring adjoining ground, by going up into the air with additional stories, or by moving away from the center to a larger site. To extend up into the air is unsatisfactory for the average retail business except in the case of large department or specialty stores. This upward growth solves office building growth, but retail stores hesitate to construct higher than from five to ten stories. The problem of window display space is most important to most progressive retail shops, and frontage on a traffic street is imperative. Whether the shopkeeper moves to a new district or acquires adjoining land results in the commencement of the outward movement away from the center, a steady, almost glacial process. Cheaper land away from the center tends to promote and foster this outward drift.

The rate of outward movement in the shifting of business districts in the natural course of growth is in proportion to the rapidity of population increase. Slow growing cities see business districts expand in periods of from twenty to forty years. Where the rate of growth is rapid, the shifts may occur in periods of from ten to twenty years.

Occasionally natural barriers retard axial and outward growth and effect a temporary stoppage. Cross streets marking important intersections with a principal artery of business, gulleys and topographical faults delay normal shifts.

The course of growth in a business district is marked by a gradual rise in land values until a place is reached which represents the point of highest retail utilization. Then occurs, after a varying period of stabilization, a slow but steady decline as high grade shops move and are replaced by businesses representing lower standards of utility until land once regarded as the best in the city becomes so remote from high grade business as to be greatly reduced in value.

Review

- 1—What effect does the opening of a choice residential district have on growth of a business district?
- 2—Explain the shifting of New York's business district.
- 3—Outline what happened in Los Angeles.
- 4—What took place in Cleveland?
- 5—What occurs in cities bordering water fronts? How does growth occur in these centers?
- 6—What is the fundamental cause of shifting business sections?
- 7—What effect do increasing land values have on business districts?
- 8—Outline the development of suburban business areas and the reason therefor.
- 9—What often happens to business centers after a great disaster?
- 10—Explain what happened in San Francisco following the great fire in 1906.
- 11—What follows a great public improvement, such as construction of a terminal, where much business real estate is wiped out?
- 12—What is meant by business growing "outward" as contrasted to "upward"?
- 13—What element controls the outward movement of business districts?
- 14—Explain how natural or artificial barriers retard business expansion.
- 15—How does competition between merchants for sites affect land values?
- 16—What is meant by the point of highest retail utilization?

CHAPTER 24.

KEEPING PACE WITH CHANGING LAND VALUES

Constant change in utility—The evolution of growth—What intelligent remodeling will accomplish—Adapting old structures to new uses—Examples of change in the “twilight zone”—How new buildings prosper at the expense of old ones.

Urban land is subject to constantly changing utility as population growth and spacial expansion occurs.

The small rural community, with a few general stores surrounded by the homes of settlers, is the forerunner of a large city, with its complex organization.

During the period of growth, as more people are attracted to reside within its boundaries, farm lands are subdivided into sites for homes. New retail businesses demand space formerly used for residences, industries require sites cut from either rural or residential areas, and the process of change in land use progresses steadily.

Houses, close in to the business center, are torn down to make place for a new store building, forcing occupants to seek residential accommodation farther from the business district. Frequently buildings used for primitive general stores cease to be adequate for expanding business, and must be removed to furnish locations for newer and larger structures. The small factory building becomes inadequate, and a new plant is built. Thus the process goes on constantly in the growing community. Rural lands become suburban homesites, later, perhaps, becoming valuable for multiple dwellings and apartment structures, and ultimately giving way to commercial uses.

The small town grows but slowly, but its growth is essentially similar to that going on in the larger city. Shifting business districts inundate residential areas which are forced farther out. Secondary streets, at first improved with homes, are soon needed for more business buildings, and the homes are forced to the outskirts of the growing town or city.

Capital invested in land and buildings in a city mounts into large sums. Probably much more goes into the buildings than is represented in land. Improvements in building construction, resulting in obsolescence of existing buildings, yearly wipe out great sums

of money in every city. With capital destroyed in this manner, it seems strange that little attention has ever been paid to the scientific alteration and remodeling of buildings which are being changed from one use to another.

Efforts are being made constantly to adapt buildings to changing conditions. Every city has many structures which are being used for purposes other than those for which they have been erected. The main business street of any city is an example of the attempt



A TERRACE BEFORE REMODELING

Successful efforts to renovate and remodel old courts in Philadelphia have brought interesting results. In 1922, a Philadelphia manufacturer conceived the idea of remodeling the court shown above. Note the change made, on the opposite page.

which is made to stem the tide of changing use. The enterprising merchant who owns a building, structurally sound, which is beginning to show traces of age, installs a new front for his store, or perhaps has an entire new front built on his building. Ninety per cent of the structure, probably, is sound. By spending ten per cent of the cost of a new building, he secures a new front that makes his establishment look "as good as new."

Nearby is a building with a front that resembles a stone monument. It is the deserted home of the city's most important bank, which has moved to larger and more modern quarters. A far sighted real estate operator buys the structure, tears off the front of the



—AND AFTER

This is how the project looked after the architects and builders got through with it. Huge property values in cities might be greatly conserved and enhanced if treated to intelligent remodeling such as this one was given.

building, and remodels it into an up-to-date store building, with a probable economic life of thirty or forty years ahead of it.

As space begins to become valuable down in the very heart of a city, property owners begin to realize the possibilities of using basement space for commercial purposes. Entrances to basements

are constructed where there may be opened small restaurants, bowling alleys and Turkish baths. More intensive use of the land brings greater rental returns, which are reflected in increased values.

At the edge of the business district one encounters an old church. The congregation has moved to a location nearer the homes of its members. The church offers a chance for someone to convert it into



INTELLIGENT REMODELING DOUBLED BUILDING'S RENT

This picture shows the Masonic Building, Denver, before it was remodeled.

other uses. Stores may be built in front of it. It may be converted into a theater, a lodge headquarters, a print shop, or a mattress factory may find occupancy there. Ten or twenty years may elapse before the land becomes so valuable that the old building must be demolished, and given over to better uses.

Beyond the church, and fronting on the main street in a section which has not yet been needed for business purposes, may be found

old factory buildings, erected, used and abandoned by industries. Such structures may be converted to profitable uses as garages, warehouses, or reconstructed as power blocks to house infant manufacturing enterprises requiring small areas of space. A new lease on life is given to structurally sound edifices which thereby have



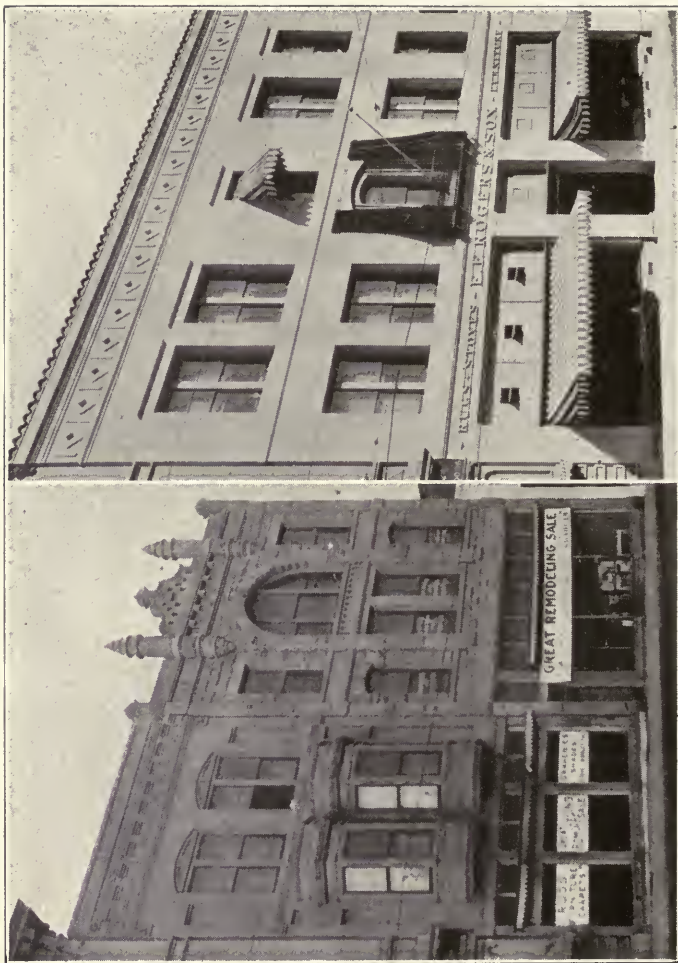
HOW THE MASONIC TEMPLE BUILDING LOOKED LATER

This shows the same structure after changes were made. Income was raised from \$24,000 a year to \$49,600, at a total remodeling cost of \$150,000, which made the building almost as good as new.

opportunities to perform further economic services to the community.

A school, in the heart of a business district, becomes depopulated as families move to outlying residential areas. The old building can be reconditioned and used for boys who desire to learn technical trades. Thus the old school building continues its public service.

Fine big houses on the city's main street, which a few years ago were the pride and delight of the town, are deserted by their



MAINTAINING PHYSICAL VALUE IN BUILDINGS

The old building on the left, located in Santa Barbara, Calif., was structurally sound but had an unattractive front. Its owners rebuilt it along the lines indicated on the right, making it one of the most attractive stores in its locality at a comparatively small expense.

owners who move to new and more modern edifices in the parklike subdivisions farther out. Here is found, perhaps, the most common form of changed use of buildings. The houses are made to serve a variety of purposes, for they are too good, structurally, to tear down, and even if torn down there may be no immediate use for the land. Thus they become occupied as offices by groups of doctors, local headquarters for philanthropic organizations, restaurants, and furniture stores. Undertakers, antique shops, photographic studios, fraternity and club houses may also occupy such buildings. Beyond the business fringe on the main street of many cities, this sort of occupancy may always be noted. It is a manifestation of the desire of owners to obtain rentals from property which is in the zone of transition from residential to business use.

With building costs high, more attention is now being given to remodeling of structurally sound buildings, to the end that they may more adequately keep pace with changing utility. The "twilight zone" of every city is filled with structures, which, by carefully designed remodeling, may be made to serve new purposes for years to come.

Sometimes it is wise to tear down old buildings, even when structurally sound and rentable, where the land can be more profitably used for outdoor automobile storage. Just at the edge of business activity in a city there are always a number of old structures which are not producing adequate rental. These may be demolished, and the land employed for parking or gas station purposes, thereby earning a higher return, until such a time as the sites are in demand for new structures of a higher utility.

Many shrewd operators in large cities seek old and abandoned buildings for conversion into structures for other uses. In one city an old street car barn was abandoned in a district which was rapidly becoming an important sub-business center. The property was bought at a reasonable price. A new building was erected on the main street frontage, and the car barn, which had set back some distance from the street, was remodeled into a large market house, with stores fronting on the side street. The enterprise was a decided financial success. In another case, several adjoining apartment houses were purchased, and converted into a hospital. Apartment buildings, properly located, and especially if of semi-fireproof construction, can frequently be converted into sanitariums.

In congested sections of cities are found little squares or parks, many times almost unused, and usually unkempt. Frequently these



UTILIZING A MISPLACED BUILDING

This burlesque theater was built on a short narrow street in Indianapolis, being sadly misplaced for theater purposes. After lying idle for six years, a garage man conceived the idea of utilizing it for automobile storage purposes. It was remodeled, and has become a highly successful business venture. Many buildings not adapted for the purpose for which they are being used can have revenues greatly increased by proper utilization.

are converted into children's playgrounds, for which there is a real need. This represents an effort on the part of the municipality itself to keep pace with changing utility in land.

It is interesting to watch the transition which takes place in the built up business section of a community, as new and finer buildings replace old ones. When the city obtains a fine new office building, few persons think of the two, three or four small structures in the



FROM CHURCH TO PRINTSHOP AND ROOMING HOUSE

Real estate not only has its romance but also its tragedy. One of the tragedies found in many cities is the commercial and commonplace purposes to which erstwhile places of worship have been put. Garages, factories, warehouses, and retail stores are among the uses for which old churches are often remodeled.

older sections which are being robbed of their tenants to permit the new building to become a success. The old buildings gradually slide down the scale from second to third class office buildings, and, perhaps, close their existences as second grade warehouses or cheap factories.

The opening of a new palatial theater spells disaster to the old "opera house," which has attracted the elite of a past generation. The splendid new hotel saps the very life blood out of two or three

older hostelrys which have been catering to the better patronage for many years. Slipping, constantly slipping, they lose their patronage, and, perhaps, later close their doors forever, the buildings giving way to other uses.

The fine modern department stores which come to the city from time to time, or develop from pioneer enterprises, cast grim shadows on the small, old fashioned merchants, who have reckoned among their customers the finest families in town. Later, under the new competition, they succumb, and their store spaces find new types of tenants.

The human body changes its structural content entirely each seven years. The transition in cities is not nearly as short as that, but nevertheless the element of change is everlastingly at work, reflecting itself in the character of buildings, and the changing utility for which land in urban centers is employed.

Review

1—Explain how growth is ever subject to change in the life of buildings.

2—What happens to “secondary” streets, improved with homes, when retail business seeks expansion?

3—In which is most capital usually invested—land or buildings?

4—How can destruction of capital in buildings be, in some measure, abated or delayed?

5—Give some examples of types of buildings which are subject to remodeling operations, and what they can be converted into.

6—Name some uses to which basement space may be put.

7—For what use may abandoned factories be employed?

8—For what purposes are fine old homes on main business streets often used?

9—Does remodeling of old buildings in a city’s “twilight zone” extend their use? How and why?

10—Explain what was done with an abandoned car barn in one city.

11—What effect does the erection of a new office building, hotel or theater have on older buildings used for similar uses?

12—Do you, in your personal experience, know of old buildings that could be profitably remodeled for a higher and more profitable use? Elaborate.

CHAPTER 25.

BUILDING CHARACTERISTICS

The evolution of buildings—Striking changes came with the invention of elevators—Skeleton steel frame construction brought the skyscraper—Building heights—The case for and against the skyscraper—Developments in other building types.

Buildings are important adjuncts to the utilization of urban land.

Greatest values are to be found in those sections of cities where land is most intensively built upon. This does not necessarily mean tall skyscrapers which house thousands of tenants, but trade centers where the needs of the thronging tides of shoppers may be ministered to, and their requirements supplied.

Prehistoric man probably took up his first residence in caves, either natural, or hollowed out from the earth. Here, with proper barriers, he was able to fend off attacks from wild beasts, or wilder neighbors of his own kind. Nestlike habitations in trees were utilized for the same purpose. A cave being a dark and damp place of habitation, early man set up a lean-to of poles in front of it, and gradually expanding these in size, evolved the earliest form of the shelter which we know today as the house. Later crude huts were built out in the open, surrounded by stout fences, built to serve as a protection against sudden attack. Ancient history recounts the erection of such huts on pilings out in lakes, or on small islands near the mainland. Craftsmanship developed, and man learned to fashion a more comfortable dwelling for himself and his family, until through the ages the house as a place of residence became one of his greatest needs and accomplishments.

Manufacturing and trade in very early days were conducted in and from the homes of those engaged in such occupations. The weaver, the cobbler, the iron monger, and the maker of foodstuffs operated directly from his own home, where a space was set apart for his business activities. Modern stores and shops were not known. The time came, however, when manufacturing and trade demanded separate accommodations away from family activities, so the craftsman or tradesman took the next step in attaching a small store or workshop to his dwelling. Later he moved his family to a second



(C) Hamilton Maxwell

HUGE BUILDING WILL TOWER 110 STORIES

This is the proposed Larkin Tower to be erected in New York City, which, when completed, will be the highest structure ever erected. It will be 1208 feet high, or 226 feet higher than the Eiffel Tower in Paris. It will be 410 feet higher than the Woolworth Building, record-holder in America at this time. The base will extend up eighteen stories, and the tower ninety stories, with two stories in the basement. Special designing of steel work will take care of any swaying due to wind pressure.

story of the abode, using the entire lower floor for shop or factory purposes. A century or two ago much business was conducted in this way, and New York, Philadelphia, and other eastern American cities still have many such buildings, some of which are still being used in the same way they were a century ago. In almost every town or city may be found many shops where the merchant uses a part of his building for trade, and another for his family residence, frequently carrying on the entire business himself with the assistance of his wife and children. This is particularly true in small foreign neighborhood stores.

With growth of population in cities came more business for both the manufacturer and the shop keeper, and he began setting up exclusive buildings to house his enterprises. Cities continued to grow, demand became greater, more space was needed for business activities, and suitable buildings were designed and built to meet the changed requirements. At first they were two, three or four stories high, some one or two stories higher, but it soon became apparent that it was not convenient to climb more than four to six flights of steps, and six storied buildings seemed to be the ultimate height until the invention and development of the elevator.

The first practical elevator used in America was installed and used in 1852 at Yonkers, New York, by Elisha Graves Otis. It was operated by steam. In the late 60's came the first geared elevator, propelled by hydraulic power. The first electric elevator was set in operation in 1887, the same year that the first steel frame structure, the Tacoma Building, was erected in Chicago. Speed of operation at 400 feet per minute has since been more than doubled.

With the advent of the elevator as a means of vertical transportation, new structures were designed to rise as high as eight or ten stories. Architects and builders then discovered another serious limitation, for they found that a wall bearing building erected to a height of over ten stories required so much ground space for the walls that insufficient areas remained for actual business occupancy on the lower floor. Facing this economic barrier, commercial buildings for a time were built no higher.

Then came a startling development which seemed to sweep away all height limits. In 1887 the world's first steel framed skyscraper made its appearance in Chicago. Engineers took no risks, but made their steel framework several times heavier than needed. Nevertheless, it was found that building a structure fifteen or sixteen stories high was entirely practical. At that point, however, another barrier



THE WORLD'S FIRST STEEL SKYSCRAPER

The Tacoma Building, erected in Chicago in 1887 and designed by Col. Wm. Hollabird, was the first steel skyscraper ever built. The Tacoma type of construction carries the entire weight of the walls and contents of building on the steel frame work. The introduction of this principle revolutionized building construction in downtown areas of cities where land assumes almost fabulous values,

appeared, for it was found that elevators had their limitations, and a building over twenty stories in height required too much valuable ground floor space to accommodate the elevators. The inventive genius of man soon came to the rescue, however, and now buildings of over one hundred stories are planned.

Thus has come about, particularly in America, the development of buildings from one and two stories in height to mammoth skyscrapers which pierce the skies. The Woolworth Building was, in 1928, still the highest structure on earth. If plans which have been on foot for several years are carried through it will soon be dwarfed. The Book Tower building in Detroit is designed for eighty-four stories, while the Larkin Building, planned for New York, is to have one hundred and eleven stories.

Here are interesting facts about America's largest *existing buildings*, ranked in their order of rentable area in square feet.

Building	City	Size of Land in Sq. Ft.	Hght. in Stories	Hght. in Ft.	Cubic Ft.	Rentable Area in Sq. Ft.
Furniture Mart, Chicago.....		113,931	34	478	28,000,000	1,514,637
Equitable, New York.....		48,975	43	550.6	24,000,000	1,236,000
General Motors, Detroit.....		190,500	15	220	20,411,000	1,125,871
Railway Exchange, St. Louis.....		61,550	21	250	18,898,000	1,118,683
Graybar, New York.....		68,300	31	400	16,000,000	1,005,000
Union Trust, Cleveland.....		98,000	21	260	20,000,000	990,000
Illinois Merchants, Chicago.....		56,564	21	280	17,850,000	887,500
New York Telephone, New York.		54,484	34	486	17,000,000	857,709
Penobscot, Detroit		46,880	47	565	14,500,000	725,000
Continental Bank, Chicago.....		53,569	21	300	17,000,000	700,000
Terminal Tower, Cleveland.....		71,527	52	708	12,000,000	560,000
Insurance Exchange, Chicago....		39,580	21	260	10,400,000	548,000
Woolworth's, New York.....		29,455	58	792	13,200,000	538,933
Fisher, Detroit		120,000	28	350	17,615,000	458,000
Straus, Chicago		27,478	34	410	10,000,000	400,000
Union Central, Cincinnati.....		15,000	39	495	5,174,000	225,333
L. C. Smith, Seattle.....		12,100	42	497	2,607,056	174,000

Height in Feet of Other Imposing World Structures Are:

Eiffel Tower, Paris.....	999
Metropolitan Tower, New York.....	700
Singer Tower, New York.....	612
Washington Monument, Washington.....	556
American Insurance Union, Columbus.....	555
Bankers' Trust, New York.....	539

Philadelphia City Hall.....	535
Cologne Cathedral	512
St. Stephen's, Vienna.....	470
Pyramid	451
St. Peter's, Rome.....	433
Adams Express, New York.....	424
Whitehall, New York.....	424

Early in 1928 preparations were being made in Boston to erect one of the world's largest buildings in point of usable square foot area. It is to be known as the New England Building, and is to face Park Square. It is claimed it will be the largest store and office building in the world, and will be the first building to be erected in Boston under the new "terraced" building law, which regulates building height by volume. Its promoters claim it will contain over 21,000,000 cubic feet, and will have a floor area of more than 1,600,000 square feet. The building will be 360 feet high, and cover a ground area of 270 feet by 470 feet.

The skyscraper, so called, is an *exclusively* American institution. European cities usually limit their large buildings to six and eight stories. During the past decade, American municipal authorities have in many instances limited building heights. Building code regulations and zoning plans now fix limits above which the height of a structure may not go. "Set backs" are also required above certain levels. The limits in the larger American cities, in effect in 1928

were:

*Chicago	264 feet	*Kansas City	180 feet
Los Angeles	150 feet	*New York...2½ times street width	
Atlanta	300 feet	Philadelphia	No limit
Cincinnati	264 feet	Pittsburgh	265 feet
*Cleveland	250 feet	San Francisco	No limit
Detroit	No limit	St. Louis	250 feet
Hoboken, N. J.....	180 feet	*Seattle2½ times street width	

Note: *Indicates provision for greater heights with set backs.

Rivalry between rich men and corporations to outdo each other in the erection of tall, monumental buildings in American cities has caused a discussion as to the merits and demerits of such structures. Briefly the arguments for and against the modern skyscraper may be summed up as follows:

FOR SKYSCRAPERS

- 1—Unique and striking in design.
- 2—Skyscrapers, according to one prominent architect, are America's contribution to architecture.
- 3—They allow the intensive use of land.
- 4—Permit of low management and overhead cost per unit.
- 5—Permit convenient intra-building transaction of business between large numbers of persons.
- 6—They are economic necessities, housing many persons under one roof.
- 7—Skyscrapers do not cause street congestion, as evidenced by greater congestion in London with five and six story buildings, as compared to New York and Chicago, where skyscrapers abound.
- 8—High buildings are required in cities so that adequate income may be earned on high priced land.
- 9—Magnificent views may be obtained of the surrounding territory, at the same time giving tenants the maximum of light and air.
- 10—High buildings create an interesting skyline, and lend individuality to the appearance of a city.

AGAINST SKYSCRAPERS

- 1—Skyscrapers congest sidewalk traffic and paralyze a city's street system.
- 2—They rob neighboring lots of light and free access of air.
- 3—They force streets to carry many times the vehicular traffic they were planned to accommodate, thus aggravating conditions.
- 4—They are uneconomic, as few buildings earn a profit above the first two or three floors. Wm. E. Harmon, noted New York real estate operator says "First floor rentals make the ground values of business property. Floors above the second story rarely net interest on cost, and often pay less."
- 5—They restrict utilization of land for business because the renting population of a city is concentrated in small areas.
- 6—The cost of high buildings is excessive in relation to their earning power.
- 7—Maintenance costs increase with the height of buildings.
- 8—Lower buildings allow a greater use of ground floor space for business purposes.
- 9—Skyscrapers are usually monuments or sheer advertising ventures, and are not profitable investments.
- 10—Tall buildings are dangerous in times of fire or earthquakes, or when panics occur.
- 11—Lower floors of skyscrapers are usually dark and poorly ventilated.
- 12—Tall buildings will prove a menace to aviators if proper beacons are not maintained at night.

If only an occasional skyscraper were to be erected there would probably not be much objection to them. It is when they are crowded into a district, as they have been in the lower end of Manhattan Island, and in certain sections of the loop district in Chicago, and elsewhere, that they cause acute problems in traffic congestion which are difficult of solution.

Thomas A. Edison is reported to have said, recently: "I have no doubt that before long it will be necessary to prohibit the building of new skyscrapers in those sections of our cities which already are overcrowded, at least in New York, if something is not devised. If, for instance, New York keeps on permitting the buildings of skyscrapers, each housing as many people every day as we used to have in a small city, disaster must overtake us. When all the people start to flow into the street at approximately the same moment, or within half of an hour or an hour try to get to the entrances of buildings so that they may begin the day's business, there must be such overcrowding of the streets near those skyscrapers as must stop traffic, and cost every individual involved some part of his time. Time is really the only capital that any human being has, and the one thing he can't afford to lose. The danger of the skyscraper is that in the end, if there is no check upon it, it may cost time instead of saving it."

The so called "menace of the skyscraper" is being recognized by cities throughout America by inclusion in their building codes and zoning laws of definite provisions that after a building reaches a height of more than two or three times the width of the street it faces it must be "stepped back" in tower like formation if additional stories are to be built. This has given to America its new, characteristic style of business building architecture.

In New York City some shrewd real estate developers are turning from mammoth skyscrapers to five and six story buildings, erected for business purposes exclusively, in the Fifth Avenue shopping district. It is claimed that these developments show better rental returns than higher buildings.

In this connection, William J. Pedrick, vice president and general manager of the Fifth Avenue Association, declares: "It would seem that the time is here when it is no longer possible to figure the maximum return on property from the erection upon it of the bulkiest building the law permits. The modern trend, as evidenced all over the city, is to question the economic value of such buildings. After all, the erection of these huge bulks causes the land to lose

much of its individuality, and the entire return is on a competitive square foot basis, with cheap land almost as well favored as expensive land in the competition. On the other hand, higher priced land, if thoughtfully developed along lines for which it is particularly featured, with buildings designed to create distinction rather than cubage, may yield not only a better return but an increased return."

Arcades, devoted to pedestrian traffic, and flanked by small shops sheltered from the weather by high vaulted glass roofs are to be found in some cities, where the same principle of utilization of



ARCADES AN ECONOMIC ASSET

Several fine arcades in Cleveland extend between highly traveled thoroughfares. They are lined with attractive stores, the passageways being covered with vaulted glass roofs. Rear land lying between main business streets can be profitably employed in this way, and made to earn large returns. Several hundred thousand shoppers pass through these three arcades daily.

inside land spaces has been made effective. Arcades to be a financial success must extend between two heavily traveled thoroughfares. When so located they often prove exceedingly profitable investments, being particularly popular in inclement weather. Land which otherwise would be used for rear yard or storage space is given a rental value comparing not unfavorably to that fronting on nearby high valued thoroughfares. It is said that the first arcade building to have been erected was in London, England, in 1794. It was known as the Burlington Arcade, and today extends between Picadilly and

Burlington Street. It is 250 feet long, and only 35 feet wide. There is a 15 foot passageway, with stores facing it, only 10 feet deep. It is one story in height, and daytime illumination is furnished through skylights. Other arcades were built later in European cities, and then the idea was transplanted to America. Cleveland has four such arcades.

Arcades, in addition to serving the purposes of intensive utilization of otherwise almost useless land, filter pedestrian travel through from street to street, thus relieving heavily congested areas. They are a contribution to business districts, in cities and are commended to the consideration of those communities where they are not already in existence and where, logically, they can be built to operate profitably.

As in the case of the construction of buildings used for business and office use, there has been a marked change in the past few years in the type of structures erected for factory and warehousing purposes. Prior to 1900 the manufacturer was not primarily concerned about the character of buildings he occupied as a plant. For the most part factory land was cheap. To the original small factory building was added additions until a hodge podge of buildings resulted, badly organized for manufacturing processes, difficult to heat, poorly supplied with natural light and representing serious fire hazards, in most cases.

Then came the "daylight" factory building, the first one being erected by the National Cash Register Co. at Dayton, O. Its value demonstrated, there came about a quick change in factory types until during the Great War a number of construction companies came into existence which made a business of erecting standardized units of one, two and more stories in height. Great manufacturing plants were constructed, old buildings were scrapped, new processes of continuous operation were devised where raw materials entered a plant at one end and the finished product emerged from the other. Mass production, such as practiced by Ford and many other large manufacturers came about, costs were reduced, benefits in some cases were passed on to consuming public, and there came about a new era in plant construction and utilization.

Warehousing, to an extent, saw the same change. Old abandoned buildings which found for their final use in housing goods have been supplanted by mammoth warehouses of concrete or steel, where railroad tracks enter the lower stories or basement, goods being sent to upper floors by means of elevators. Thus was brought



AMERICA'S FIRST "DAYLIGHT" FACTORY BUILDING

In 1896, The National Cash Register Co. erected this "daylight" factory building in Dayton. Disregarding protests from architects that it was impossible to build a factory with so much glass, it was erected nevertheless, and stands today as a monument to modern factory construction. Buildings of this type are now extremely common, and have done much to speed up production, at the same time providing comforts for workers.

about another important change which has revolutionized warehousing.

Transportation facilities have improved so greatly that the merchant now finds that he does not need as much warehouse space as formerly but can order quickly and often to meet his needs. This has eliminated vast quantities of warehouse space of a certain type in many cities. It has thrown back upon the manufacturer the burden of either warehousing his own products or of operating his plant so that he can supply goods according to varying needs. All of these changes, naturally, have been reflected in changing land values.

Residential construction has had just as distinct and interesting an evolution in American cities. In older cities along the Atlantic Coast many one and two-story homes were built in rows on lots of a width of twenty-five or thirty feet. More pretentious homes of the wealthier class occupied larger lots at the edge of town. Hundreds of these "row" houses are still to be found in Philadelphia, Baltimore and Washington. Most of them have disappeared from New York and Boston, where they did not attain as great popularity.

Then came the period of two and three-story buildings, with living quarters on each floor. Gradually the idea of the modern apartment house was being evolved, although that can probably be traced back to the Indians of the southwest who constructed great "pueblos" in New Mexico wherein as high as 800 rooms are to be found. Double and duplex houses came in due time, later to be succeeded by the two-family with a living suite below and one above. Then emerged the four family and later the six and eight family apartment, being built in large numbers in many cities.

With the advent of the modern elevator and due to the rising cost of land and the desire of people to live close to their work, large apartment buildings accommodating many families came into existence. New York's north end is filled with such large apartment structures, suites in some of which rent for from \$15,000 to \$40,000 per year. It was only a step from this type of habitation to modern residential hotels, with their luxurious accommodations. Such buildings, the last word in construction and up-to-date equipment, are now to be found in large cities.

Many families desire to live in their own detached homes. Equally as great changes have come in this class of structures. From the six or eight-room cottage or two-story house of forty or fifty years ago, the tendency is toward the modern home, on its finely

landscaped lot, with two, three or four baths, maid's quarters, living room for the chauffeur over the garage which is attached to the house itself, and the kitchen equipped with iceless refrigeration and many kinds of labor saving machinery.

One of the reasons for the expensiveness of modern dwellings as compared to those of half a century or more ago are the many conveniences and comforts now incorporated but formerly unknown. Plumbing formerly consisted of a kitchen sink. The first fixed bathtub in America was not used until 1842, in Cincinnati, and was straightway denounced by the press as a "luxurious and undemocratic vanity." It was made of mahogany and lined with sheet lead. Modern bathroom equipment, gas stoves and electric devices for home use are inventions of the present century.

Even the family that lives on a farm, or resides in a suburb, has accommodations today that are palatial compared with those in use a generation or two ago. Electricity is brought to the house over wires from distant plants or it may be manufactured with a small plant in the basement. Telephone systems make neighbors of families living miles apart and almost every farmhouse has a radio. Septic tanks provide better sanitary conditions and water for household purposes is piped from distant lakes or streams or pumped from wells. Almost every farmer has an automobile making possible a trip of fifteen or twenty miles to the nearest town to buy supplies or to see the latest film. The farmer today lives, if he chooses and his means permit, in a house as modern as any that can be found in a big city.

The change in the character of building materials has been equally as great. A generation ago wood, brick and stone were the chief materials used, in the order named. Today stucco, terracotta, tiles of all kind, asbestos and glass enter largely into building construction. The suggestion has been made that another generation may see many buildings constructed almost entirely of steel, plaster and glass. This would apply as much to dwellings as to commercial and industrial buildings. "Ready to erect" houses are now being made with steel frames which are quickly encased with metal and glass and turned over to the prospective tenant a short time after their erection is begun. The pace in changing materials and design is so rapid that a building begins to be obsolete almost from the day it is put into use. Investigators find that even skyscrapers have economic lives of only thirty-five years although their structural lives are twice or three times as great.



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PENNSYLVANIA STATION IN NEW YORK

Railroads in recent years have been spending hundreds of millions of dollars for the construction of monumental terminals to care for the tremendous business being enjoyed by some lines. This remarkable airplane view of the Pennsylvania Railroad's New York terminal shows the depressed railroad tracks.

One of the most important considerations governing the relationship between land and buildings is the proportion of cost of the building to the value of the land. This varies according to the use to which land is being put. In residential districts houses are erected upon lots which should have a value of from twenty to forty per cent of the cost of the building. As the character of land changes from residential to business, land values increase, so that before a residence located thereon is torn down to provide for a commercial structure, the land should have attained a value greatly in excess of the worth of the house. Land used for industrial plants is normally of considerably less value than buildings located upon it. If the opposite is true, the use of such land is not economic and the property should be given over to more profitable occupancy.

In retail business districts where highest land values exist, the cost of a building should approximate the value of the land upon which it is located. Since the development of skyscrapers, often the cost of a building greatly exceeds the value of the land. However, for such a building to produce revenues commensurate to the investment, the site must be in the pathway of retail business growth so that ultimately the increase in the value of the land will offset depreciation in building value, and during the life of the building provide sufficient revenue to earn an adequate return upon the value of the land and building, plus such an amount which at compound interest will return the value of the building within the space of time which represents its economic life. Chief destruction of capital comes when an expensive building is erected upon a cheap lot. It would be like burying gold in the ground to erect a million dollar office building upon land so far distant from commercial development that the possibility of its ever attaining such a use is barred.

Often small buildings known as "taxpayers" are erected upon land of high value in order to produce sufficient revenues to carry the land until a more suitable development is demanded. Such a practice usually leads to future profits, for during the period when land is coming into favor for business use, sufficient revenues are produced to pay taxes, assessments and interest upon the investment.

Richard M. Hurd says that low buildings in valuable locations pay relatively a higher percentage of income than high buildings. Frequently what are called "taxpayer" buildings may cost to erect less than from one-fifth to one-tenth of the value of the land and pay better returns than any other type of improvement. Operat-

ing expenses, which run fifty or sixty per cent of the gross rentals in many office buildings, may drop below twenty per cent, including taxes—the only serious item in connection with one-story buildings.

Designers of hotels have discovered that in addition to the using of street frontages for shops, often where land values are high, the main lobby, by being placed above the valuable ground floor area used for shops, has better light and view out upon the main street. A striking example of this is the new Palmer House in Chicago. Even banks are departing from the idea that they must be encased in great monuments of stone, and in many instances the latest banking structures are providing shops on street frontages. The main banking room of the Engineers bank in Cleveland occupies a second floor location. Banks in some cities are segregated in districts by themselves. The idea of permanency, as indicated by massive construction, still dominates bank structures in such locations.

Failure of property owners to realize the importance of good architecture, and the necessity of keeping land properly improved, has resulted in entire retail business districts shifting during the course of a few years, from one well defined section to another. Enterprising merchants, eager to keep pace with their expanding needs, will not hesitate to forsake one street and pioneer in a new district where modern buildings are provided. Business, once lost, is often difficult or impossible to recover, with a consequent lessening of the earning power of property naturally located where it should earn maximum rentals, but which is handicapped by reason of the fact that buildings demanded by up-to-date merchants are not provided at the time they are needed. Such examples of business exodus should be a warning to those owners of property who are backward in making the proper kind of improvements needed, either by the modernizing of old buildings, or the erection of new ones.

Review

- 1—Where are greatest land values to be found?
- 2—Trace the history of prehistoric building.
- 3—What practice developed in connection with buildings when man began trade and industrial activities?
- 4—How did the advent of the elevator change building design?
- 5—What did the utilization of steel in building frames lead to?
- 6—Name some of the largest buildings in America.
- 7—What is meant by "set backs" in buildings?

8—Why are they provided for in building and zoning codes?

9—Give several examples of the heights of buildings in prominent American cities.

10—Give ten arguments in favor of skyscrapers and ten against them.

11—When was the first arcade built? State dimensions.

12—What is a fundamental cause contributing to the business success of arcades?

13—What is a “daylight” factory building, and where was the first one built?

14—How have warehousing conditions changed in recent years?

15—Outline the evolution of the modern apartment building.

16—What makes modern homes so much more expensive than those built some years ago?

17—Review the changes in building materials which have come about in recent years.

18—State the relation that should exist between land and building values.

19—Indicate definite changes which have come about in the construction of hotels, banks, and theaters, etc.

20—How may business districts be kept from shifting?

CHAPTER 26.

RACIAL AND NATIONAL SETTLEMENTS AND GROUPINGS

Growth due to immigration—Effect on values due to the presence of foreigners and negroes—Colonization of foreign born residents—Chinese form their own settlements—Assimilation a slow process—Segregation of colored people and the problems presented—Important court cases—The Japanese situation on the Pacific Coast—Restrictive immigration policies.

Many large cities, particularly those in the industrial class, enjoyed substantial growth annually due to the influx of foreign born residents before the present restrictive United States immigration law became so stringent in the latter part of 1924 and in 1925. Continuation of the restrictive policy will doubtless result in a decrease of the rate at which such cities will expand hereafter.

Immigrants entering the country in such large numbers, many being unable to speak English, caused the growth of many racial and national settlements in American cities, some of which had peculiar effects upon city growth. Add to this the problems associated with the migration of negroes from southern to northern cities, and situations arose which proved of vital importance in urban development.

While settlements of foreign born residents or colored people sometimes have the effect of making cities grow rapidly, it is significant that in some instances, notably where negroes congregate, land values in the locality occupied by them are depressed.

Nearly every city that has passed the 100,000 population mark notes that groups of people form little districts or "villages," in which they live in a more or less congested manner, with their own people closely congregated about them, forming colonies with distinct local culture and customs, a strange mixture of Old World heritage and American adaptation. "Little Italy" is to be found in a score of American cities. "Little Hungary," "The Ghetto," "Little Poland," and "The Black Belt," are almost as common.

Someone has aptly referred to the average American city as a "racial succotash."

New York City's population in 1920 of 390,832 Italians ex-

ceeded that of Genoa, Italy, which in 1921 had a population of 300,784.

The following figures from the official U. S. Census Bureau for some of the foreign born populations in the nine largest cities in 1920 are interesting:

	Germans	Italians	Poles	Austrians
New York	194,154	390,832	145,679	126,739
Chicago	117,288	59,215	137,611	30,491
Philadelphia	39,766	63,723	31,112	13,387
Detroit	30,238	16,205	56,624	10,674
Cleveland	26,476	18,288	35,024	29,724
St. Louis	30,089	9,067	5,224	5,587
Boston	5,915	38,179	7,650	1,530
Baltimore	17,461	7,911	11,109	2,985
Pittsburgh	16,028	15,371	15,537	10,072

In the City of New York, where the ready made clothing industry is conducted on the largest scale in the world, there were in 1920 479,797 Russians, many of whom were engaged in the so-called needle trades.

There is a distinct tendency on the part of people who live in foreign sections to buy from their own neighborhood stores, patronizing their friends and relatives whenever they can do so. Whole families residing in the old world were brought to America, being quickly absorbed into the life of the settlement which is a part of the larger city. Many of the larger cities of this country are made up extensively of foreign born residents or those whose parents came to this country from foreign lands.

These foreign sections sometimes develop and maintain business districts of size and importance. In Cleveland there are nearly 10,000 Italians living in one square mile in a secluded section off Euclid Avenue on Mayfield Road, which is as distinctly Italian in almost every respect as a town in Italy. Only Italians live there, and only Italian stores, churches, picture theaters and homes are to be found there. The two real American institutions are the public school, used almost exclusively by Italian children, and a settlement house and library combined, presided over by American directors. The community is orderly, well kept, and quite as presentable as an American city of the same size, and possesses a strong spirit of American loyalty, yet it is intensely Italian in composition and feeling.

In Detroit, where the Polish population is large, the same conditions may be found with the community having its own leaders

and institutions, both religious and secular. The people patronize their own merchants and places of entertainment.

Only a few cities in America have real "Chinatowns." The one in San Francisco is the largest, though the one in New York also is of considerable size. A most interesting one exists in Vancouver, B. C. Several other cities also have smaller sections, where the sons and daughters of the Flowery Kingdom segregate themselves more completely than do any other nationality. San Francisco's Chinatown is an important section of the city, not so much because its picturesqueness attracts tourists, but because of the large volume of importing business done through the various Chinese merchants, who supply about 62,000 Chinese living in the United States with oriental merchandise. The district, with a population of 7,744 in 1920, has its own telephone sub-station, its own newspapers, library, public schools, hotels for both Chinese and American guests, and all of the requirements of a city complete in itself. Land values along Grant Street, its main business artery are high in some sections, and the thoroughfare is most interesting to traverse. As an economic unit of the city it is as unique as was Nob Hill before the fire and earthquake. Curiously enough, the Chinese population of the United States decreased from 71,531 in 1910 to 61,639 in 1920. It has remained about stationary since then.

Welfare workers of large cities often disapprove of the practice of foreign born residents congregating in their own settlements. On the other hand, if this population should spread throughout a city, it might have a decidedly depressing influence over a wide area of residential territory. While considered from a social standpoint, it may be better for American cities to rapidly assimilate their foreign born population, nevertheless, it seems the better social policy to have at least the first generation of immigrants from certain foreign lands live in settlements by themselves until they absorb national ideals and customs and are able to speak the English language, and become familiar with American institutions.

A most troublesome problem in assimilation which has confronted American cities for many years is what to do with the negro population. Since 1915 there has been a steady migration of these people from southern to northern cities. In the latter communities the colored population has doubled and trebled in many instances. High wages offered by labor agents to the colored people of the south easily persuaded them to move northward. Many instances are cited where a colored man a few months after arriv-

ing in a northern city received in wages as much per day as he was earning for a whole week's work in some southern town, or on a plantation. There is a natural inclination on the part of colored people to live in their own communities. With the increase in colored people coming to many northern cities, they have, however, overrun their old districts, and swept into adjoining ones, or passed to other sections and formed new ones. This naturally has had a decidedly detrimental effect on land values, for few white people, however inclined to be sympathetic with the problem of the colored race, care to live near them. Property values have been greatly depreciated by having a single colored family settle on a street formerly occupied exclusively by white residents.

The total negro population of the United States, according to the federal census of 1920, was 10,463,131, or about one-tenth of the population of the country. Of the total 3,559,473 lived in urban centers, and 6,903,658 in rural sections. For the next several years, however, there was a great migration of the negro from the southern to northern sections of the country where high wages were being paid for common labor. The federal census in 1920 indicated that there were in New York City 152,467 negroes, in Chicago 109,458, in Philadelphia 84,459, in Detroit 40,451, and in Cleveland 34,457. Since then it is estimated that negro population in all of the larger cities of the north has increased at least twenty-five per cent.

Segregation of negroes seems to be the reasonable solution of the problem, no matter how unpleasant or objectionable the thought may be to colored residents. Southern cities have a method of taking care of the problem which is well known, and seems to be entirely effective. Northern cities, more sympathetic towards the negro, have been so backward at times in coping with the problem that serious race wars have resulted, and lives of both whites and blacks have been snuffed out in ensuing disturbances. Frankly, rigid segregation seems to be the only manner in which the difficulty can be effectively controlled. Colored people must recognize the economic disturbance which their presence in a white neighborhood causes, and must forego their desire to split off from the established district where the rest of their race lives.

Attempts to pass laws segregating the colored people to a given district have not been successful from a legal standpoint, on account of the fourteenth amendment to the constitution of the United States. In 1916, the voters of St. Louis passed an ordinance by

a vote of five to one, involving a plan to restrict further extension of the negro district which was growing rapidly. There was in 1920 a negro population in that city of about 70,000. The law provided against further expansion of negro occupancy in such blocks as contained less than fifty per cent negroes. If in excess of fifty per cent, the block was to be recognized as negro territory exclusively, and restricted against white occupancy.

Following the passage of the St. Louis ordinance, suit was instituted by negroes, attacking the constitutionality of the ordinance. The State of Kentucky had previously passed a law of similar import, and about the time St. Louis was preparing to make its ordinance effective the Supreme Court of the United States declared the Kentucky law unconstitutional, and upon this decision being rendered the St. Louis authorities took no further steps to enforce their law.

In 1923, however, some thirty neighborhood improvement associations were formed in St. Louis, whose members pledged themselves not to sell or rent to negroes within certain restricted blocks. The agreement among white owners, it is claimed, is entirely legal and promises a solution of the problem.

Early in 1927, the Supreme Court of the United States rendered a decision of importance relative to the sale to, and occupancy of property by colored people. The case had its inception in 1921 in the City of Washington, D. C., when John J. Buckley, Irene Hand Corrigan, and other property owners in a certain district, entered into an agreement not to allow their properties "to be used, occupied, purchased by, or leased to persons of negro blood." The following year, however, Mrs. Corrigan agreed to sell her property to a Mrs. Helen Curtis, acknowledged to have negro blood. Buckley brought suit to prevent Mrs. Corrigan from transferring her property to Mrs. Curtis. Support for Mrs. Curtis and Mrs. Corrigan was given by the National Association for the Advancement of Colored People, and it developed into a test case of great importance, as the Association had consistently and vigorously fought every effort made towards the passage of laws favoring the segregation of negroes. Buckley won in the District of Columbia Court, and transfer of the property was prohibited. Appeal was taken, and six years after the case began Justice Sanford of the United States Supreme Court handed down a decision pointing out, among other things, that the only constitutional ground which Mesdames Corrigan and Curtis had for maintaining that the property owners' agree-

ment was invalid, was that it was contrary to the Fifth, Thirteenth and Fourteenth Amendments. Quoting from the opinion, the Court said: "It is obvious that none of these amendments prohibit private individuals from entering into contracts, respecting the control and disposition of their own property, and there is no color whatever for the contention that they rendered the indenture void."

During the same week that the Supreme Court was handing down its decision in the Buckley-Corrigan case, the Legislature of Texas passed by a vote of 104 to 1, in the lower house, a bill previously passed by the Senate, providing for segregation of the white and negro race in residential sections of Texas cities. Curiously enough, this action was taken a few hours after the Supreme Court of the United States had held unconstitutional a similar Louisiana law in a test case brought by Benjamin Harmon, a New Orleans negro. Sentiment throughout southern states is solidly for segregation, but Supreme Court decisions invariably hold that legislative action of such character is unconstitutional.

Land values change slowly in colored settlements. Investors are loath to enter such districts to buy property, and when they own property there they charge all the rent possible because of the depressing influence on land value of negro occupancy, and because rented property in such neighborhoods is taken care of very poorly by such tenants. Colored people in cities are seldom land owners. Sections preempted by colored people are usually ones which have been worn out by another class of residents, who have either been driven out by the negro influx, or have moved away because the accommodations were of too poor a character to meet ordinary requirements. In some instances, fine residential neighborhoods of a generation ago have been given over to colored populations, notably in New York, Cincinnati, St. Louis and Chicago. In smaller cities, however, the accommodations are often of the most meager and unsanitary character imaginable. Special efforts will probably be made in time to furnish colored people living in cities with adequate housing facilities.

Brought from the south as a war time labor emergency measure, the negro seems to have firmly established himself in northern industrial cities. Most of those who migrated were from urban districts in the south, and it is said that comparatively few plantation laborers made the transfer. It is estimated by government officials that not more than ten per cent returned south, dissatisfied with the prospects and opportunities that northern cities afforded them. Such

workers find employment at all kinds of common labor. Some become hodcarriers, and graduate later as skilled plasterers, earning from \$10 to \$15 per day. Many engage in semi-skilled tasks in mills and foundries. Brought north chiefly because they were not affiliated with labor unions, and were seldom permitted to join them, and because they would consent to do common labor which white workmen spurned, the presence of colored people in many large American cities offers new problems in housing and land utilization.

"Tenderloin," or "red light" districts have disappeared from practically all American cities because of enlightened public sentiment, which does not now countenance legalized vice. Such districts had a decidedly depressing influence on neighboring sections, though rentals received from the resorts themselves were abnormally high, because of the questionable character of occupancy. Probably the most infamous section of this kind in America was known as the "Basin District" in New Orleans, where some sixteen square blocks were given over to low brothels, saloons and kindred enterprises. During the Great War, the government abolished the district. It became literally a deserted village, with real estate values almost wiped out of existence. Barbary Coast in San Francisco met the same fate. In course of time such districts usually revert to warehouse or industrial uses, and memory dims the sins of the past. Happily they now have no place in the life of a modern American city.

The Japanese problem of the Pacific Coast is one that ties itself in with growth of towns and cities. Had not the Japs been excluded there is no doubt but that whole towns of them would have grown up and flourished in California, to the detriment of other communities. The standards of living of Asiatic coolies is so far below that of the lowest type of American born workingman, that it has been thought wise to exclude such immigrants from this country. Competition of the sort experienced while the Japs were given some latitude soon convinced the people of the western seaboard states that neither Japanese, Chinese or East Indian coolie labor was desirable. Control of a stern character is exercised over those already living here.

Closely related to the entire subject of foreign born residents in cities is that of immigration. Restrictive immigration policies tend to maintain at a lower level the growth in population of the entire country, and consequently of American cities, for it is significant that most immigrants coming to the United States naturally

gravitate to the cities where wages for common labor are highest. The policy of choosing the character of immigrants, which this country desires to welcome and assimilate, seems a fixed one. Restriction of new arrivals, however, is certain to reflect itself in the population totals of some cities when the next federal census is recorded.

Between the years 1875 and 1927 almost 28,000,000 immigrants were received into the United States, helping materially to swell the size of cities, for a majority of them settled in urban centers, due to the fact that they found friends and fellow countrymen in such settlements. The early 80's saw an influx of immigrants, which dwindled in the 90's and began swelling again with the beginning of the present century. The highest number entering in any given year was in 1907, when the authorities admitted 1,285,349. The next highest year was 1914, when there were admitted 1,218,480. In 1925 the restrictive immigration law became effective, stringent provisions being enforced that were never theretofore invoked, with a consequent lowering in the number admitted thereafter.

The total number of registered immigrants from 1875 to 1927 follows:

1875	227,498	1902	648,743
1876	169,986	1903	857,046
1877	141,857	1904	812,870
1878	138,469	1905	1,026,499
1879	177,826	1906	1,100,735
1880	457,257	1907	1,285,349
1881	669,431	1908	782,870
1882	788,992	1909	751,786
1883	603,322	1910	1,041,570
1884	518,592	1911	878,587
1885	395,346	1912	838,172
1886	334,203	1913	1,197,892
1887	409,109	1914	1,218,480
1888	546,889	1915	326,700
1889	444,427	1916	298,826
1890	455,302	1917	295,403
1891	560,319	1918	110,618
1892	579,663	1919	141,132
1893	439,730	1920	430,001
1894	285,631	1921	805,228
1895	258,536	1922	309,556
1896	343,267	1923	522,919
1897	230,832	1924	708,896
1898	229,299	1925	294,314
1899	311,715	1926	304,448
1900	448,572	1927	335,175
1901	487,918	TOTAL	27,975,803

In the process of city growth, a distribution of individuals takes place, which causes the natural formation of national and racial communities. This tendency locates groups according to residence and occupation. Within the downtown business area, or on nearby streets are found the districts inhabited by the rover and tramp. In the territory immediately surrounding the central business district are the cheaper rooming house sections. Immigrant colonies and racial groups also inhabit such areas of deterioration. Pushing out along some main thoroughfare is found the "black belt."

Some racial groups have their city habitat close in to the central business district until a certain degree of economic independence is attained, when more prosperous individuals of the groups migrate further away to better residential districts, which thereupon commence to deteriorate and enter the zone of transition from one community use to another.

While this tendency to national and racial groups causes disintegration of certain local districts, yet it furnishes a use for property during the transitional period when the city is pushing out and extending its commercial and business areas into formerly high grade residential sections.

The rapidity of growth of a city is not important, but that its growth shall be of a desirable character is of the utmost importance.

Review

- 1—What class of cities benefited most by arrival of immigrants?
- 2—What effect do settlements of foreigners and negroes have on land values?
- 3—Give the names applied to several types of settlements in cities.
- 4—What city in Italy had fewer Italian residents than there were in New York in 1920?
- 5—Where do foreign born residents do much of their buying?
- 6—In what two cities are the largest Chinatowns to be found?
- 7—Why is it desirable that foreigners reside in separate communities until they have become Americanized?
- 8—Outline some of the problems presented in connection with the assimilation of colored people.
- 9—How did St. Louis attempt to segregate colored residents?
- 10—Give a brief review of the Buckley-Corrigan case in Washington, and explain the issues involved.
- 11—Why do land values in colored settlements change slowly?
- 12—Why are rents charged negroes often high?

13—In what cities have former imposing residential sections been turned over to negro occupancy?

14—Explain what is meant by the Japanese problem of the Pacific Coast.

15—Why is the country's immigration policy closely allied to the subject of foreign born residents?

16—How many millions of immigrants came to America between the years 1875 and 1924?

17—What were the peak years in immigration?

CHAPTER 27.

SOCIAL CONTROL OF LAND USE

Governmental regulation in relation to land use—Price fixing activities of legislative bodies—Effect upon land use and value—How exercised—Real estate brokers' license laws—Building codes—Zoning laws—Regional and city planning—Eminent domain—Taxation as an evidence of social control of land use.

Governmental regulation of individuals and their possessions seems to be firmly established. On all sides and in many ways inspectors now pass upon how one may act, and what one may do with his property. The mattress for the bed must be manufactured according to established sanitary standards; the meat for dinner has been slaughtered under federal and state inspection; if one desires to erect a building, a permit must first be obtained, and the construction carried on in compliance with certain stringent regulations. Everything seems subject to public control.

In no place does such regulation manifest itself more than in relation to land and its uses. Railroads control great areas of land, and because of their importance to the structure of American civilization their operations have been strictly regulated by federal and state authority. Rates are fixed both for passenger and freight transportation, limiting the interest return which this type of utility may earn from its occupation and use of land. This likewise benefits those private owners of land who find it necessary to use railways in connection with the transport of various products of the soil, or manufactured in buildings erected upon land.

The fixing of the price of wheat during the Great War was a temporary expedient, considered necessary to stimulate production of grain so essential to the conduct of America's military operations. Such measures as rate regulation and price fixing influence not only the use of land but limit the return which may be obtained therefrom when utilized in the particular businesses which are subjected to such control.

In many other and more direct ways is the public control of land utilization felt. Fundamental in American political theory is a recognition of the power of government to regulate life, liberty and the use of property in the general welfare. Legislative bodies

exercising sovereign power enact laws which define the limits within which persons may act voluntarily and how property may be used under individual ownership. To the courts is reserved the power to interpret and construe these laws and to determine whether their operation infringes constitutional guarantees.

This police power, which is appurtenant to all stable governments, is the ultimate control of individual life, liberty and property for the public welfare and makes possible regulatory measures which actually operate to confiscate property if public necessity demands. Through this power a citizen may be imprisoned or even deprived of life itself when convicted of violating some law designed to promote common welfare.

In its application to real estate, this sovereign power is exercised in many ways, not only by federal and state authorities, but also by municipal officers. The very right to own land, while guaranteed to individuals, has frequently been denied to corporations which are creatures of law. In some jurisdictions a corporation may acquire and hold only such real estate as is necessary to conduct its business operations. Some states prohibit the formation of companies for the purpose of owning or dealing in real property. While there has been great liberalization in the laws of all the states on the right of ownership of real estate by corporations, yet limitations reminiscent of such restrictive provisions still exist in the statutes of most states. Public and semi-public corporations such as railroads, public utilities and the like may acquire land for the carrying on of their corporate functions by purchase or, where granted by law, through the exercise of the right of condemnation providing the property is needed for a public purpose, but this power is jealously guarded so as to prevent such companies from improperly using this delegated privilege for the acquisition of land for other than strictly public use.

In recent years the right of individuals to engage in the business of buying and selling real estate for others has been regulated by law in many states. Real estate license laws are constitutional because of the police power vested in state governments. Such laws materially affect the ownership of land, for by their enactment legislatures admit that real property is a commodity, commerce in which must be controlled to protect society.

For many years cities have controlled building operations by requiring owners to obtain permits from constituted authorities as a prerequisite to actual construction or remodeling operations. Build-



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THE WORLD'S LARGEST FERRY TERMINAL

Over fifty million people pass each year through this great ferry terminal at the foot of Market Street in San Francisco. The building, which cost \$1,177,000, accommodates nine boats at once. These ply from San Francisco to Oakland and other towns and cities on San Francisco Bay.

ing codes determine the character of materials to be used, the method of installing equipment and in other ways regulate the free right of an owner to develop his land according to his own fancy.

In most large American cities ordinances limit the height levels to which buildings may be constructed. A great variation exists in these regulations dependent upon what has seemed to the particular authority as proper to safeguard the general safety and welfare. Such limitations as well as those determining the method of building construction have uniformly been justified upon the theory of safeguarding the health and safety of the public and when unreasonable in their operation, or beyond what has been construed to be within the police power of municipalities, are declared unconstitutional and illegal as a violation of individuals' rights to freely use property. Mere esthetic considerations have consistently been held to be an unreasonable exercise of governmental control.

Since 1916 a new plan of public regulation of land use has arisen in what are known as zoning laws. Under such legislation, the individual right to use urban land freely and without limitation is carefully restricted. Public authority steps in and determines where land shall be used for residential purposes, where business may occupy property and the areas in which manufacturing may be carried on. Furthermore, certain provisions regulate the area of lot covered by particular types of buildings. Bulk limitations are also common to most ordinances whereby the size of structures are determined according to the purpose and general plan.

Regional planning is now advocated by many as an aid in city development. Control over the utilization of hundreds of acres surrounding a metropolitan center seems necessary in order to adequately plan for expansion incident to a city's growth. The motor vehicle, which is operating to decentralize cities and cause their citizens to seek homes miles distant beyond the civic center, presents highway problems which require coordinated planning of large areas which may at some future time be required for city use. Already Boston, Los Angeles, Chicago, New York, Pittsburgh and other cities have legally constituted bodies with limited powers charged with the duty of planning metropolitan areas in advance of future growth so as to properly accommodate the various public needs of expanded cities, design future highway and street extensions, stipulate the utilities to occupy such arteries and, in general, carefully plan all future requirements of greatly extended urban areas.

Planning has been in operation for a sufficient length of time so that almost every city of size has some board or commission promoting it. Unofficial groups have for many years sought to influence the locating of playgrounds, public buildings and parks, street extensions and the like, according to some definite harmonious plan. Such bodies have been effective in their work and have accomplished much to make large cities more attractive and better places to live in. Official planning bodies are now a part of the city government in Chicago, Cincinnati, Cleveland, Los Angeles and many other cities with more or less power to work out and adopt plans for city lay-out. In some places, unfortunately, these commissions have little power to enforce their determinations.

Eminent domain is the power of the state to take private land for public use. This power is inherent and all real property is held subject thereto. Whenever it is deemed necessary or beneficial that certain lands shall be appropriated for public use, the state, and the federal government in certain cases, has the right to confiscate lands upon the payment of proper compensation to owners.

Not only may the state exercise this right, but the power may be, and is frequently, delegated to certain corporations of public character. Railroads, terminal companies, electric power and light companies and the like are all semi public in nature and operate utilities which are for the common benefit of all. These corporations are usually given such appropriation rights when it becomes necessary to acquire land. A corporation in order to have this power must be one, however, which performs a service of a distinctly public character. It naturally follows that a state may not authorize a private individual or a strictly private corporation to take the lands of another with or without compensation.

The social justification of condemnation of land for public purposes is easily recognized. Individual rights and welfare must always be held subservient to the common good. If a municipality requires a new street to relieve traffic congestion, land must be acquired for its opening. Some stubborn property owner, by refusing to sell or asking an unwarranted price for his land, may block the improvement and thus defeat the promotion of a public work that would benefit many thousands of people. Educational institutions are necessary for the welfare of the state and nation. Buildings must be constructed within convenient walking distance. Without the power of condemnation which boards of education possess, it

would be difficult, if not impossible, to acquire sites to meet the school building requirements of a community.

Public parks and play grounds are necessary to the health and safety of urban residents. Here recreation may be provided at minimum public expense. In order to acquire land for such purposes in proper locations, the power of eminent domain is granted to park boards and similar public bodies.

Railroads are considered by law and are, in fact, utilities charged with performing a service which is for the common benefit of all persons. Transportation for people and goods must be furnished at reasonable rates. The law requires a common carrier, such as a railroad, to provide service to everyone without distinction to anyone able to pay the rates charged. For many years such companies have been granted the right to condemn land for the proper operation of functions which are of common benefit.

Land actually needed for public purposes has long been subject to eminent domain, but only in recent years have American states permitted municipalities and other public corporations to extend this power in order to acquire more land than is actually necessary for the construction of an improvement. This right of excess condemnation has been extensively used in Great Britain, Germany, France and Belgium for a period long enough to be considered more than an experiment. Before this power could be granted in some states, constitutional amendments were necessary. Massachusetts, Ohio, Wisconsin, New York and Rhode Island now have such amendments and have passed enabling statutes to exercise the power. Certain states have granted very broad powers to their municipalities to acquire, through eminent domain, excess lands which may be sold after an improvement is completed. Other statutes are more limited in scope.

Frequently, in extending a street, a city may find it advisable to acquire an entire property extending beyond the boundaries of the contemplated improvement. This avoids resultant property damage and operates to save public money. New values in abutting lands are thus created by street openings which are the result of the expenditure of municipal funds. If a city owns the frontage along the new thoroughfare, by sale of these remnants of land sufficient money may be obtained to materially assist in paying the cost of an improvement.

Sufficient public justification for the use of the power to condemn is found by some in its exercise for recoument of costs of

the public improvement or the sale of the excess land for profit. This, perhaps, is the ground which is weakest of all from the viewpoint of the private property owner. Governments are not primarily operated to usurp private functions in business. Nor should governmental agencies such as cities and towns be encouraged to engage in ventures which are properly the field of private endeavor. To acquire real estate with the object of resale at a profit when such property is not needed for, or remotely concerned with, a public project would seem to undermine the political and social theory of government in America. Such a policy will never find favor or adoption in this country because of the tide of opposition which would immediately arise. The most that may result from excess condemnation of land by public agencies will be the acquiring of lands for the protection of nearby public improvements or for the purpose of obtaining slightly more than enough land which, when benefited by the new development promoted by public funds, may be sold to defray a part of the cost thereof. Incidental profit may accrue as a result of the operation but, if not in the course of an unjustifiable usurpation of private land not in the slightest degree concerned with the improvement, it is not fairly subject to criticism.

Taxation as a governmental power has been used primarily for the purpose of obtaining revenue to carry on legitimate public functions. Social control of land is seldom the reason for the imposition of a tax burden. However, indirectly, the taxing of real property does so operate. The raising or lowering of taxes may discourage or encourage investment and so affect land use. Incident to the taxing procedure in states where ad valorem impositions are levied, a valuation is necessary upon which to compute the official rate. New York passed an act which permitted cities to exempt from taxation new buildings until 1932. The purpose of this legislation was to stimulate the building of many needed structures. The effect of the act was to impose, deliberately, a control by the public upon land use.

A discussion of whether or not the state directly or through its governmental subdivisions should have such powers may be considered academic in view of the fact that there are so many examples of its exercise. With the increasing population, higher standards of living and the continuance of a policy of government to engage in more and more functions which hitherto have seemed to be of private concern, it is reasonable to expect that from time to time the

practice of increasing control over private property for social ends through public agencies will continue.

As a further evidence of this tendency, rent control laws passed in New York and the District of Columbia during and after the Great War are examples. Before that time, few people would have supposed that a government would consider the operation of renting property subject to public control. Not being monopolistic in character, property owning and operating were left uninterfered with in respect to the price to be obtained from tenants for space. Shortage of housing accommodations in these two cities and a possible desire on the part of some landlords to obtain rents beyond reason created what was thought to be a sufficient emergency to cause the passage of these particular laws.

Perhaps as cities grow in population and area and become more complex in their functionings, the time may come when all private property may be subjected to a control which will not only limit the design, character of buildings, use of the site and height of structures, but also its occupancy, the rentals to be charged, its method of operation, the exact temperature to be maintained, and the services to be furnished. As an evidence of the tendency for social control of land it may be noted that at a large convention of city planners held in the City of Los Angeles in the early part of 1927 there was a long discussion as to the definite control of all urban land. Speakers urged not only much more stringent supervision of the subdividing of land in and near cities but also advocated measures which would compel a property owner, before he proceeded to erect a new building, to submit the plans of such a structure to a board of review which, before giving the owner the right to proceed, would determine whether the structure was in harmony with its location and other buildings in the neighborhood. It was maintained that by doing this a higher grade of architecture would result, streets and districts would be developed in a harmonious manner, the whole procedure benefiting the property owner who, theoretically at least, would be able to secure a better revenue by virtue of having an artistic, well planned building in a neighborhood built up with equally attractive structures.

More will be heard from time to time on this subject of the social control of land, for the thought is in the minds of many persons who believe that a reasonable exercise of control over subdivision planning and the erection of buildings along public thoroughfares, at least, is a function in which the public at large should

have some part. The object of public control of real property should be, however, the promotion of social betterment and chiefly on that ground can it be justified.

Review

- 1—What is meant by Social Control of Land Use?
- 2—How do the fixing of railway freight rates affect land?
- 3—Price fixing—how is it important in connection with real estate?
- 4—Does government in America possess any control over the property of individuals? How?
- 5—What is the police power in governments?
- 6—Are corporations always free to acquire and own land?
- 7—If not, why are they limited in ownership when individuals are not?
- 8—How are building operations controlled?
- 9—May a city limit the height of buildings? If so, under what power?
- 10—What are zoning laws?
- 11—What is meant by "Regional Planning"?
- 12—What is the justification of city planning?
- 13—Define the power of "Eminent Domain"?
- 14—What is the social justification of control of land use?
- 15—What is excess condemnation of land?
- 16—What states have statutes permitting exercise of the power of excess condemnation?
- 17—What is the power of taxation?
- 18—Does the exercise of the power of taxation affect land value?
- 19—What state encourages building by exempting new structures from taxation for a period of time?
- 20—Is the control of land use by law tending to increase or decrease?

CHAPTER 28.

ZONING AND PRIVATE RESTRICTIONS AS AFFECTING THE USE OF PROPERTY

Zoning a recent innovation—Its history and development—Many American cities now zoned—Principles involved—Arguments for and against zoning—Tendencies of zoning—Sustained by the U. S. Supreme Court—The problem of the negro—Private restrictions—Limitations on use of land.

Zoning of American cities is an evolution of comparatively recent years, and owing to the limited time it has been in general existence it is somewhat difficult to determine its effect upon city growth and land values.

In September, 1927, it was announced by the Division of Building and Housing of the U. S. Department of Commerce that approximately fifty-five per cent of the urban population of the United States was being regulated by zoning ordinances. The 553 zoned municipalities in the United States contained more than 30,000,000 people. Of these 52 cities had populations of over 100,000.

The principle of modern zoning was adopted from the Germans. During the last half of the nineteenth century many experiments in municipal control and regulation were made in German cities, which always exercised rights over the use of land to an extent far beyond those of cities located in other countries. The police power of German communities was invoked to compel property owners to submit to various sorts of restrictive practices, and the training of the German people was such that they readily acquiesced. There is little doubt but that through the autocratic means resorted to, many German cities improved their general outward appearance, but doubtless to the detriment of some individual property owners.

The first important experiment in zoning in America took place, curiously enough, in its largest metropolis, New York City, where, in 1916, a drastic ordinance was made effective. Its purpose was to restrain certain practices, and to serve as a control over future operations rather than to serve as a "cure all" for existing conditions. Due to the encroachment of light manufacturing establishments in business sections, it was discovered that retail trade was being



TYPICAL ZONING MAP FOR A CITY

In preparing to zone a city, detailed maps like the above are prepared, and submitted for critical analysis by residents. Here is the City of St. Louis, and the manner in which certain portions of it are assigned for specific use.

steadily driven northward on Manhattan Island towards Central Park, and that an area which was formerly the center of the city's retail business rapidly had deteriorated in value through the encroachment of wholesale and manufacturing enterprises. Thus there was a steady drift uptown.

About 1910, a number of clothing manufacturers established new factories in the neighborhood of Sixth Avenue and Twenty-Third Street, which was then an active retail district. Men, mostly foreigners, were the principal employees of certain branches of the clothing business. These workers in increasing numbers began thronging the streets during the noon and late afternoon hours, so that it became difficult for shoppers to pass. This gradually caused many of the high grade stores in the neighborhood to move. Altman's, Stern Bros., and Best & Co., all prominent merchants, were among those crowded out. The decrease in land values was pronounced, dropping in some places from \$15,000 to \$20,000 a foot front to as low as \$4,000 a foot front. Fifth Avenue, for several blocks below, and above Twenty-Third Street, was also effected. An organization known as the Fifth Avenue Association took steps that resulted in the creation of a municipal zoning commission. Two and one-half years were consumed in working out and submitting to the public the conditions of the zoning law, which was later passed and which has since been rigidly enforced.

The law had the distinct effect of segregating the cloak and suit manufacturing business into a section of its own where suitable accommodations were built. The blight which had rested on the retail business districts was lifted, and many contend the result has been the stabilizing of real estate values in New York City.

In principle the advisability of zoning of cities can scarcely be questioned. Different classes of business and industries are segregated to districts adapted to their needs. Apartments and double houses are allotted to other territories, while areas for single houses are always provided.

Many cities throughout the country have enacted zoning laws, and others contemplate their adoption. The principal features of a typical zoning law embody the following:

- 1—Exclusion of trade and industry from essentially residential districts, different classes of which are definitely established.

- 2—Segregation of apartment and tenement buildings into areas selected for them, usually close to transit thoroughfares.

3—Permanent establishment of business streets on which commercial buildings only can be erected and maintained.

4—Barring of so-called nuisance and semi-nuisance industries from all sections of the city except areas especially selected for their use.

5—Definite selection of territories in which manufacturing of the heavier types may be conducted.

6—Permanent establishment of set back and building lines which may help in street widening plans to be enacted in the future.

7—Limitations upon the height of commercial buildings, usually restricted to a height equal to the width of the street on which they are located. Sometimes a height of one and one-half times or twice the width of a wide street is permitted.

8—Regulation of the percentage of area a building may occupy on a lot, whether it be a dwelling, apartment or business block.

Under a zoning law a factory is not permitted to locate in the midst of a residential section. Neither can a garage or store building be built next to homes or apartment houses. Zoning provides for the orderly growth of a city which should result in stabilizing values of each type of property according to its use.

Some opposition has arisen to zoning in certain cities throughout the country. The chief arguments used by the opponents of the practice are:

1—Zoning is un-American because it restricts individual initiative and limits the free use of property.

2—It attempts to control the use of property in rapidly changing districts without consideration for the natural laws which control growth.

3—Zoning is class legislation, controlled by politicians and demagogues.

4—It has a tendency to force rents higher than laboring classes can stand because fewer small buildings are erected for rental purposes, and larger ones are more expensive to construct because of restrictive conditions.

5—Residential districts now existing may be destroyed by the arbitrary act of a few men in charge of a zoning bureau.

6—Zoning will raise taxes for the home owner because it reduces the value of much downtown property.

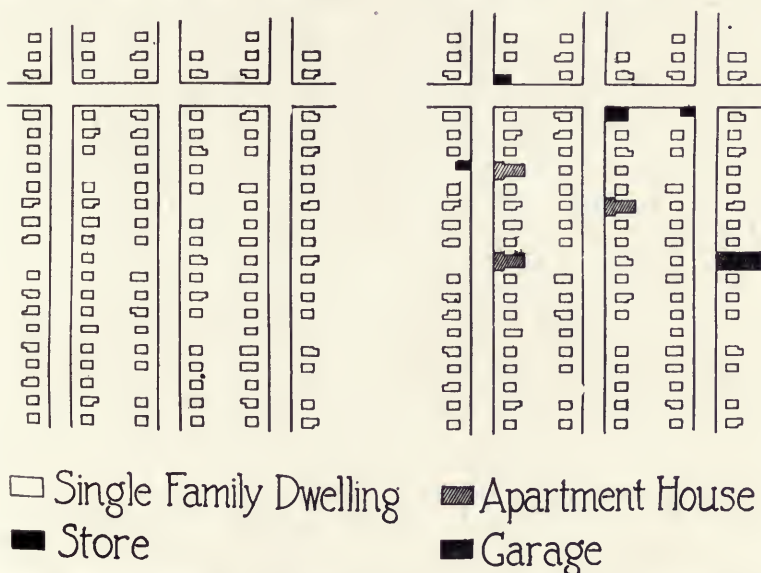
7—Zoning confiscates property because it does not compensate

the owner when the use allotted to land is for a different purpose than that to which it is being put.

8—It denies the owner the right to control the use of his own property, and arbitrarily dictates its future utilization.

9—Zoning curtails the growth of a city, putting it in a straight-jacket, thus destroying the individual initiative which has built cities in the past.

The preponderance of argument seems to favor the zoning of cities. If a zoning law can be adopted by a city while it is still small in size, much opposition which often appears will not be encountered. The bitterest opposition is expressed by property owners



WHAT HAPPENS IN UNRESTRICTED NEIGHBORHOODS

On the left is a typical city block restricted to the erection of residences only. On the right is a block in an unrestricted district where all classes of business may rush in and endanger property values.

in the larger cities who resent dictation regarding what they can or cannot do with their land. *Personal selfishness* is often at the bottom of the opposition of owners to zoning.

Zoning of business areas will have a tendency to decentralize congested business districts, for if it is impossible to erect an office building higher than a regulated height it means that more office buildings must be built in order to meet the city's requirements.

The desirability of zoning laws in suburbs of large cities seems

to be proven by the experience of many home communities where it has been tried. Retail business, manufacturing and nuisances are not allowed to creep into residential districts, destroying home values, and undermining the elements of permanency and exclusiveness which make residential districts desirable. The erection of a public garage in a residential neighborhood immediately detracts from the desirability of the immediate vicinity for home uses. While the owner of the land on which such a building is erected may get more revenue, he does so at the expense of his neighbors who have invested in homes.

One of the great difficulties experienced in connection with zoning is the matter of the control given those persons charged with its enforcement. If they are not men of the highest integrity, possessing balanced judgment, evils may creep in to destroy the confidence of the public in the manner of the administration of the zoning plan.

Insofar as this discussion is concerned, the two questions of interest are:

Does zoning help or hinder a city's growth?

Does zoning increase or lower real estate values?

The first question may be answered by the statement that the growth of those cities in which zoning has been effective has not placed certain restrictive measures upon owners relative to the use of their property is one which public policy should, to a great extent, dictate. If promiscuous growth is detrimental, and orderly growth desirable, and a zoning law accomplishes the latter object, then it seems that zoning, properly applied, would be beneficial rather than detrimental to any growing community. Selfishness on the part of a property owner who is determined to use his land for whatever purpose he chooses, should not prevent the accomplishment of a zoning plan, if the general interest of the community is thereby advanced. In the long run such an owner is likely to fare quite as well under a zoning law, and realize just as much from his property.

Zoning laws are not retroactive. If a building exists in a neighborhood, it is not destroyed, but is permitted to live out its economic usefulness. However, no other objectionable building of a similar character can be placed in the neighborhood, to the detriment of properties whose values may be effected by its presence.

With reference to the question as to whether zoning raises or lowers real estate values, it is difficult to believe that such a law, in its general application, can do other than raise values throughout an entire community although in specific instances it may curtail the ambitions of property owners who hold lots near, or in restricted sections, who wish to use their land for a widely different purpose from that of the general neighborhood. Public welfare is paramount, and the wishes of a few individuals to realize more from their properties for uses foreign to the character of the neighborhood *should not interfere* with the general application of the principle.

It is significant that in cities where zoning laws have been made effective there has been great real estate activity in certain sections. Home neighborhoods which formerly had no protection from business encroachment have taken sudden spurts, and have built up rapidly as soon as it was apparent that only residences were to be allowed therein. Likewise, as soon as certain streets were designated as business thoroughfares, thus creating a limited amount of business property to be allotted to each section of the city, such streets were bound to become, sooner or later, important retail arteries, restricted permanently for that use.

The New York zoning ordinance is typical of zoning regulations which are being adopted by many cities, though substantial variations occur in different laws. It is interesting to note the structure of the New York ordinance. The city is divided into districts, which are established for the purpose of regulating and restricting the location of trades and industries, and of buildings designed for specific purposes. In residential districts, dwellings, clubs, churches, schools, libraries, hospitals and sanitariums are permitted. In business districts certain specified types of industries are excluded in addition, generally, to all others which are obnoxious or offensive by reason of the emission of odor, dust, smoke, gas or noise. In unrestricted use districts there are no limitations. Existing uses are not disturbed. Height districts of three-quarter, one, one and a quarter, one and a half, two, and two and a half times the street width at the street line, are created, a greater height being allowed as setbacks are provided. Area districts provide for the size of yards, courts, and other open spaces for buildings erected after the passage of the ordinance. These provisions limit the amount of land which the building or buildings upon a given lot can cover.

For years American cities have in some form limited building construction by ordinances known generally as building codes. The areas over which a building could be constructed have been limited by most municipalities to 90 per cent building occupancy as the maximum for corner lots, ranging lower for inside parcels. Many cities



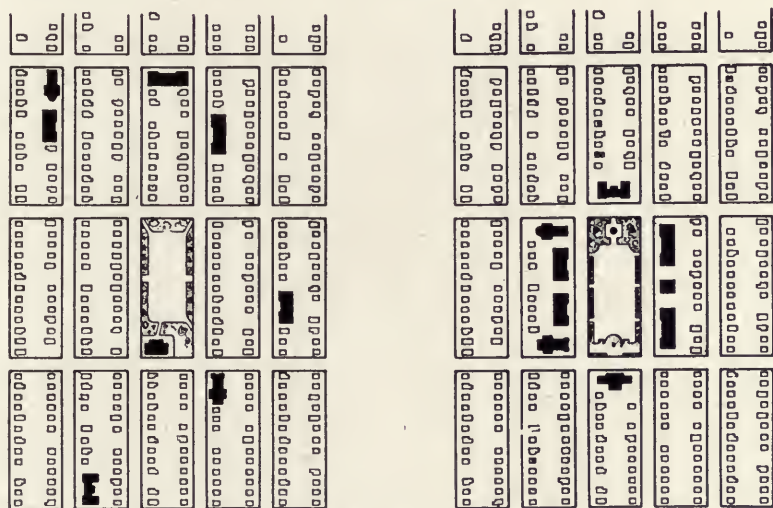
SIDEWALK CONGESTION BROUGHT ZONING LAWS TO AMERICA

Here is Fifth Avenue, New York, looking north from 21st Street on an April day, when thousands of workers employed in neighboring loft buildings poured out into the street for fresh air and exercise. This condition drove retail trade further out the avenue, and in 1916 led to the passing of the first zoning law in America.

adopted height limitation for buildings in business districts long before zoning ordinances as such were known in America.

Ten years after its inception in the City of New York, the constitutionality of zoning was finally passed upon and approved

by the Supreme Court of the United States. In November, 1926, the Supreme Court handed down its decision in the case of the Village of Euclid, Ohio, vs. The Ambler Realty Co., the latter attacking a zoning ordinance as being confiscatory, and, therefore, unconstitutional. In the Federal Court at Cleveland, The Ambler Realty Co. won its case, Federal Judge D. C. Westenhaver having declared the ordinance unconstitutional. The Supreme Court, however, swept aside the lower court's decision, and thereby established the



GROUPING OF PUBLIC BUILDINGS DESIRABLE

On the left is a district where public and semi-public buildings are placed haphazard. On the right they are grouped about a central square or community center.

validity of hundreds of zoning ordinances which had been passed by various cities throughout the United States.

The Supreme Court decision pointed out that the increased complexity of urban life has made inevitable additional restrictions in respect of the use and occupancy of private lands, and laid down the following broad propositions:

That regulations which might have been rejected as arbitrary or oppressive even half a century ago are sustained under the complex conditions of our day for reasons analogous to those which justify traffic regulations;

That this is not inconsistency, for while the meaning of constitutional guaranties never varies, the scope of their application

must expand or contract to meet the new and different conditions of a changing world;

That the Euclid ordinance and all similar laws and regulations must find their justification in some aspect of the police power, asserted for the public welfare;

That the line, which in this field separates the legitimate from the illegitimate assumption of power, is not capable of precise delimitation, but varies with circumstances and conditions. In brief, the court holds that, while the eternal verities of the constitution remain fixed, there must be elasticity in their application.

In the opinion of the court, the law of nuisances may be consulted for helpful analogies in the process of ascertaining the scope of power. The question of power to forbid erection of a particular kind of building, like the question whether a particular thing is a nuisance, is to be determined, the court stated, not by abstract consideration but in connection with circumstances and locality. The serious question in the case arises over the provisions of the ordinance excluding from residential districts apartment houses, business blocks, retail stores and shops, and other like establishments. The question involves the validity of what is really the crux of more recent zoning legislation, namely, the creation and maintenance of residential districts from which business and trade of every sort, including hotels and apartment houses, are excluded.

The decisions of state courts on this question, the Supreme Court observed, are numerous and conflicting, but those which broadly sustain the power greatly outnumber those which deny it altogether or narrowly limit it.

"The matter of zoning has received much attention at the hands of commissions and experts," the decision continued, "and the results of their investigations have been set forth in comprehensive reports.

"With particular reference to apartment houses, it is pointed out that the development of detached house sections is greatly retarded by the coming of apartment houses, which has sometimes resulted in destroying an entire section for private house purposes; that in such sections very often the apartment house is a mere parasite, constructed in order to take advantage of the open spaces and attractive surroundings created by the residential character of the district."

Under certain circumstances, the court holds, "apartment

houses, which in a different environment would be not only not objectionable but highly desirable, come very near to being nuisances."

The opinion continues: "If these reasons, thus summarized, do not demonstrate the wisdom of sound policy in all respects of those restrictions which we have indicated as pertinent to the inquiry, at least, the reasons are sufficiently cogent to preclude us from saying, as it must be said before the ordinance can be declared unconstitutional, that such provisions are clearly arbitrary and unreasonable, having no substantial relation to the public health, safety, morals or general welfare."

It is a practical necessity that zoning be done under the police power of the state without compensation to owners. In a few cases statutes have been passed authorizing zoning by eminent domain with damages to those claiming to be injured, to be assessed upon those who have been benefited. Little zoning has been done under such statutes because of the large expense involved.

In connection with an investigation of the Los Angeles zoning law by a committee of the Los Angeles Real Estate Board, an interesting condition was discovered as the result of a survey of the Wilshire-Hollywood residential district. This revealed that while twenty-one per cent of the entire frontage was zoned for business use, but seven per cent was actually built up with such buildings, indicating that the amount allowed was far too high. Of the seven per cent, two per cent was used industrially. It was reported that in this district there were, at the time of the survey, 6,665 vacant business lots, but that if all residential and multiple family lots were actually built upon, it would require only 1,585 business lots to provide for the additional population. The committee came to the conclusion that if the entire district were built up some 5,000 lots were already zoned for business purposes that would find no patrons were buildings erected upon them. The committee believed that many of the 5,000 lots should be rezoned for multiple dwelling and hotel purposes.

A city planning conference held for the State of California in Los Angeles during the summer of 1927 inspired the following statement: "It has been established that one 50-foot lot is needed for business purposes for each 150 people in a town. Some towns have one of these lots for each eighty-five people. Naturally it follows that business property values suffer, and the business men are not prosperous."

The Chicago Regional Planning Commission has made an extended study of the subject of the relative amount of business frontage per population, and has determined that the relation should be 50 feet for every 100 persons in cities and villages. This seems more nearly to meet the requirements of the situation than the larger number of 150 persons.

Building regulations under police power of a state necessarily limit the land owner more or less in the manner in which he can use his property, and for these limitations no compensation is provided. The validity of zoning laws, whether general throughout the city, or varying by districts, is dependent upon the question of whether they are constitutional. If constitutional, courts usually inquire further into whether the regulations are reasonable and justifiable under the powers granted to the city under the police power. Courts of different states have passed in various ways upon zoning laws. The greater majority have held zoning to be constitutional when exercised reasonably.

The steady flow of the negro into the middle and northern states and cities has made the racial problem national in importance. Neighborhoods populated by white persons have been invaded by colored families, and often aristocratic residential districts have suffered tremendous lessening of property values because of the appearance of a negro resident. Many parents are unwilling to send their children to schools where the children of all classes, nationalities and races mingle and congregate. In an effort to find relief from such conditions some states have passed laws segregating negroes into certain districts, and prohibiting the co-mingling of the races in public schools. Cities have passed ordinances designed to zone according to color or race. The policy of segregation prevailed in Boston early in the nineteenth century, for in Massachusetts law reports may be found the case of *Roberts vs. City of Boston*, where the Supreme Court of that state held that the general school committee of that city had power under the state constitution to provide separate schools for colored children, and to prohibit their attendance at schools maintained for white children.

In fact, no decision has been found, either state or federal, which has denied the right to segregate races, where limited to the separation of the races in schools, or on the cars of common carriers. However, when racial zoning laws are considered, the Supreme Court of the United States has assumed a different attitude, holding that



■ Store □ Dwelling

BUSINESS CENTERS ARE DESIRABLE

Convenient shopping districts are desirable in a residential neighborhood, but instead of permitting stores anywhere, as indicated on the left, they should be grouped in one section as on the right. More business will come to merchants, and greater property values will result. Merchants will be able to pay higher rentals because of concentration of all neighborhood business in one area.

such ordinances contemplate the exclusion of one race from the residence district of another, and, therefore, prevent the free alienation of land in violation of constitutional rights. In the light of decisions permitting segregation in schools, and on public carriers, these decisions forbidding residence property racial zoning seem a bit odd.

Private restrictions contained in deeds, leases or agreements may accomplish racial zoning in a manner that is not in violation of constitutional rights. The case of *Corrigan vs. Buckley*, referred to elsewhere herein, established the validity of limitations upon the use of property by colored persons when contained in an instrument in the nature of a private contract between the parties. Inasmuch as restrictive covenants in deeds and leases are in the nature of contractual obligations, this method may be safely adopted to provide against the encroachment of colored persons into white residence neighborhoods.

Since many deeds and long term leases contain restrictions limiting or controlling the use to which the property conveyed may be put, it is necessary to give consideration to the effect of such limitations upon the growth of cities, and the development of land values therein.

It is possible to so impose restrictions upon the use of a parcel of land as to entirely deprive the owner of its enjoyment. Restrictions of such a character probably would be declared by the courts as unreasonable and illegal, especially if unlimited in time, and where an adequate consideration had been paid for all the land.

It is not unusual for deeds to be so drawn as to prevent the use of land for business purposes. Operators in sub-dividing acreage for high class allotments, frequently provide stringent restrictions as to building lines, cost of the residence to be constructed upon each lot, the number of buildings upon each lot, type of construction, and the square foot area to be covered by buildings so constructed. Some deeds contain restrictions against construction of garages other than those attached to residences. Others provide against gardens other than flower gardens to be planted within a certain number of feet of the front line of the lots, intending by such limitations to prevent lot owners from planting vegetable gardens in front of their houses.

Where such restrictions are considered reasonable by the courts, they will be enforced. However, diligence is the price required of

lot owners in such a restricted district, and if violations are permitted without complaint on the part of neighboring owners, it is difficult, and often impossible, to maintain restrictions in effect by recourse to the courts.

It is generally conceded by persons versed in residential real estate values that restrictions imposed upon the use of lots in an allotment contemplating the maintenance of the residential character of the district for a period of years will enhance the desirability of the neighborhood as a location for high grade homes.

Home builders seeking to invest substantial sums of money in fine houses desire to know that a neighborhood will be maintained as a district of homes for a long time, so they will be undisturbed in the enjoyment of their property. Few wish to invest large sums in homes in locations where business blocks soon may be built, with accompanying heavy street traffic and where, perhaps, next door may be constructed a cheap apartment house, or a building with small stores.

In an allotment where subdividers wish to obtain prices in excess of \$30 per foot front, it is almost imperative that reasonable restrictions be imposed upon the use of land to maintain its residential character for at least twenty-five years. The higher the price asked per lot, the larger the lots, and the finer the improvements installed, the more stringent restrictions required in order to make the allotment attractive to the class of purchasers who are able to pay high prices. This is particularly true in high grade residential sections in or near large cities.

In order for restrictions to be effective, the area restricted must be of sufficient size to effectually bar cheap homes, small stores, apartments and other types of business uses considered detrimental to high grade residential neighborhoods.

A few examples of subdivisions most highly restricted by the promoters are the Shaker Heights developments of The Van Sweringen Co. in Cleveland, the Ridgewood Park allotment in Springfield, O., Ottawa Hills in Toledo, Roland Park in Baltimore, the Nichols development in Kansas City, Palos Verdes near Los Angeles and St. Francis Wood in San Francisco.

While stringent restrictions are usually necessary to a high grade residential development, care must be exercised in the layout of the district in order to provide suitable areas readily accessible for small shopping centers. Housewives usually desire to have with-

in short driving distance good small shops where a variety of purchases can be made. This shopping area can be so restricted that its presence will benefit the subdivision instead of detracting from its value. Builders can be required to submit plans to the company for approval or revision, and cost limitations can be imposed. Restrictions as to the use of such property will aid in making the shopping district high grade, and contribute real value to the entire district.

Where a lack of foresight has operated to restrict the entire area against any business use, and great distances intervene between business centers, making shopping for the housewife difficult, many prospective purchasers refuse to locate there.

In properties sold for business purposes, restrictions upon use have no place. Invariably values are undermined where, in a district lying in the path of business growth, deeds contain restrictions which limit against its business use.

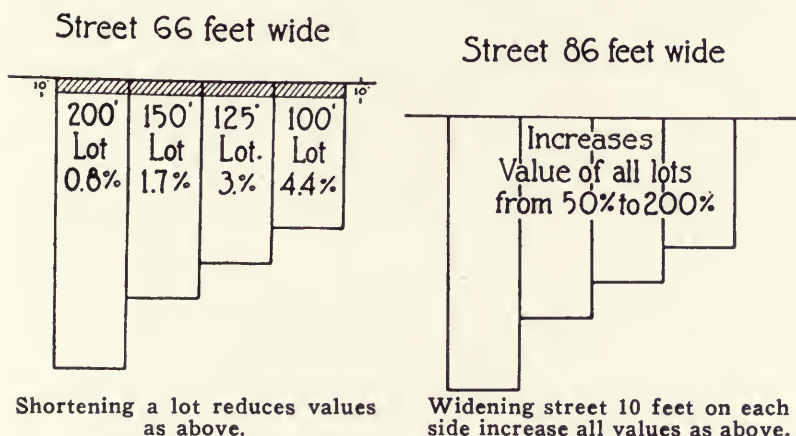
Where land upon a street, once residential in character, has been restricted so as to prevent its use except for residences, an effectual bar is raised which may retard the growth of the thoroughfare for a business use. In such case, it is necessary for owners to join and mutually release the various properties from the operation of the restrictive covenants, a slow and difficult procedure, for if one owner refuses to assent, the restrictions, if properly drawn originally, cannot be released.

This situation arises often on streets like Woodward Avenue in Detroit, Euclid Avenue in Cleveland, Wilshire Boulevard, Los Angeles, and Delaware Avenue in Buffalo, all at one time famous as residential streets. These thoroughfares are axial in character, leading away from the center and principal business districts of each city to suburbs and country. It is quite natural for business to develop eventually along these routes.

Without considering the technical legal phases of restrictive covenants in deeds and leases, usually where limitations upon the use of a tract of land are imposed as a part of a general scheme, the restrictions being reasonable and uniform, and not haphazard and arbitrary, and where they run with the land for the benefit of the grantor and all lot owners in a subdivision, and where limited as to time, restrictions are enforceable, even though business development has reached the boundaries of the allotment so restricted. However, vigilance must be exercised to prevent violations which

will tend to change the character of the district since courts look askance at restrictive covenants as limitations upon the free use of property, and are always unwilling to enforce them where it is feasible to read them out of existence.

Briefly, restrictive covenants in deeds to residential property contemplating the maintenance of the district for home use, limitations being against apartment or business use, will enhance the value of a section for home sites. Land restrictions tend directly to block the growth of a business area, and often will turn the development to another street to the detriment of the street so



PROFIT AND LOSS IN STREET WIDENING

The average owner can give land required for street widening, and reap substantial profits on his gift. This is a matter of great interest at this time inasmuch as many cities are taking steps to widen streets to accommodate automobile traffic. Unless lots are very shallow the land which is taken may be considered as coming off the rear of a lot instead of from the street frontage. To widen a street twenty feet it must be remembered that it is necessary to take only ten feet of frontage from each side. The benefits derived from this loss of land are made up many times, in most instances, by the advantages of having a wider thoroughfare. No standard system has been evolved for determining the amount of damages due a property owner for land taken for street widening purposes but doubtless some standardized system will be evolved as this practice continues.

restricted, and generally may be considered as detrimental to districts in the pathway of retail business growth.

Any limitations imposed upon the use of urban land will effect the growth of a community. If by the term "growth" is meant increase in population this statement would have to be limited in

many respects. Usually, such restrictions as may be imposed upon the use of property either by public regulation through zoning, or building codes, or those contained in private agreements, deeds and leases, have little, if any, effect upon the population growth of a city. Other causes control as to whether or not people select one or another city for residence.

Directional growth, and the internal expansion of cities is materially influenced by such regulations as are imposed by zoning ordinances, and building codes as measures of public control of land utilization, and restrictions by contract as attempts by private individuals to limit the use of property. Natural causes operate normally to land selection for various uses. The intersection of two major thoroughfares may be the potential location for a local business district. A factory established in a section will attract workers to seek homes nearby, and influence the subdivision of land for residential use. The growth of a central business district may be directed along some main avenue, and in the course of events commercial structures will replace former buildings on land abutting this street.

A zoning law or deed restrictions may prevent or block the operation of natural factors causing directional growth. The street intersection referred to above may be surrounded by land restricted or zoned against retail or commercial use. The manufacturer may be barred from building upon the site of his choice, and a potential manufacturing area effectually blocked. Deed restrictions may also prevent the further extension of a central business district in the pathway of normal growth.

It may be seen that such artificial regulations imposed upon the use of land are effective to direct the path of internal expansion of cities. Directional growth may be largely controlled in this fashion. Zoning laws and building codes seldom provide sufficiently for future city development. Areas provided for one or another use may never develop accordingly, where without such control a different use would arise for the land therein.

Any artificial limitation upon the use of property, whether zoning ordinances or private restrictions, substitutes the judgment of, at best, a few individuals for the composite judgment of the community as evidenced in those normal and natural forces and factors which cause communities to develop in certain ways and directions.

Review

- 1—Give brief history of inception of zoning.
- 2—What proportion of urban centers are zoned?
- 3—Name eight features covered by zoning laws.
- 4—Give nine arguments against zoning in cities.
- 5—Does zoning have a tendency to decentralize business districts? Why?
- 6—Does zoning help or hinder a city's growth?
- 7—Does zoning increase or lower realty values? Why?
- 8—Outline some features of New York's zoning law.
- 9—Indicate the U. S. Supreme Court's attitude towards zoning.
- 10—Why is it necessary to base zoning laws on the police power of the state?
- 11—Indicate what has been discovered in Los Angeles regarding the volume of property zoned for business use.
- 12—What should the proportion be per population?
- 13—Outline the problem of the negro in regard to zoning.
- 14—Do private restrictions of property virtually provide zoning?
- 15—May private restrictions deprive an owner of the use of property? How?
- 16—Do private restrictions, properly imposed, increase the value of property? How?
- 17—To what extent should potential business property be restricted?
- 18—Do zoning laws or private restrictions limit and direct the growth of a city? How?
- 19—Is directional growth sometimes effected?
- 20—What does any artificial limitation upon the use of property accomplish?

CHAPTER 29.

CONTROLLING AND DIRECTING THE GROWTH OF CITIES BY PROPER PLANNING

Regional planning—What it attempts to do—Economics of city planning—Modern conception of planning—Traffic must be regulated at its source—Elements of a comprehensive plan—Advantages gained by an early start.

Most of America's larger cities have been like the famous character in Uncle Tom's Cabin, Topsy, who "just grew." Without design or plan, a community expanded in any convenient direction, according to the whim of the particular settlers. Enterprising acreage owners, seizing opportunity to dispose of near-in lands, subdivided areas haphazardly, and in whatever way would produce the greatest number of salable lots to yield the greatest profits to the owner.

Streets were "dead ended," or laid out with awkward jogs or turns, and frequently an extension was made much narrower than the original street. Such highways were adequate to accommodate the slow traffic of horse drawn vehicle days, but with the advent of the automobile, and its steady increase in popular use, congestion developed, until now there is scarcely a city in America that can boast of avenues and thoroughfares adequate to take care of the great number of motor vehicles now using them.

Cities of the twentieth century are much larger, both in area and population, than could have been anticipated when most of them had their inception. With greater numbers of people seeking the city as a place of residence, problems in housing and providing adequate recreational facilities have arisen which demand solution in order to preserve the public health and welfare. Provisions must be made for more and larger municipal buildings to house the multitude of public services necessary to the operation of a city's affairs.

Attention of municipal authorities, moreover, has been directed to the formation of plans to prevent traffic congestion from choking city streets and menacing future expansion and development. It became apparent that not only is it imperative to solve existing aggravated conditions, but also to plan to prevent their recurrence.

From this has developed what is known as regional and city planning. The term "city planning" is self explanatory. Regional

planning, however, a more recent development, comprehends the designing and layout on paper of a metropolitan area, sometimes far beyond the present boundaries of a city, so as to provide for an anticipated expansion into new districts to accommodate increased population. To project these plans into areas far beyond corporate limits, and to make possible the fulfillment of a program of orderly development, it has been necessary to obtain special legislation establishing metropolitan districts, and regional planning commissions to examine and approve or reject subdivision plans for such districts. These bodies are given special police powers to make their orders effective.

Regional planning is so recent that experience is limited, and little can be said as to results yet obtained. In many places planning of this character is still in the control of citizen bodies without official authority. In the Boston area since May, 1923, regional planning has been in the hands of a Division of Metropolitan Planning, a body of members appointed by the governor of Massachusetts, acting under special legislative act. A committee on regional planning for the City of New York, and its environs, was set up by the Russell Sage Foundation, supplemented in part by the work of the State Housing and Planning Commission. Los Angeles has had a County Regional Plan Commission since 1923 which is now mapping out and developing an area 800 miles in area.

Wisely administered, a regional plan will operate materially in the future to prevent cities from suffering from the same haphazard expansion as has occurred in the past. Streets and highways will be designed to fit into the general plan of a metropolis, according to its needs, and not according to the whims of subdividers. Adequate parks can be provided. Playgrounds and school grounds may be reserved to meet anticipated needs. Spaces for public buildings can be acquired years in advance of actual needs. Business districts may be designed so as to best serve given areas.

It is quite obvious that planning will affect the physical expansion and directional growth of cities. A wise plan will foster and an unwise design will stifle the progress of a city.

The outstanding development of the past decade relating to city growth has been regional planning. Indeed, the best qualified experts among city planners now declare that regional planning is just as important, if not more so, than merely planning for the use of the land which lies within a city's limits. Thomas Adams, city

planner for New York, is working on a regional plan which embraces co-operation on the part of four hundred municipalities. Chicago's regional plan covers 250 cities located in three states, with a population of 7,500,000. Almost every city has nestling about it from a dozen to over one hundred towns, villages, and townships, which should be embraced in a comprehensive metropolitan plan. Working out this larger project is regional planning, and many large cities throughout the country are now projecting their plans far beyond their immediate borders.

The modern regional plan not only establishes radial thoroughfares out to nearby suburbs, but it also seeks to link outlying towns



THE CHICAGO RIVER AS IT IS.

and villages themselves with direct highways, making access between such places easy and convenient.

The National Automobile Chamber of Commerce in November, 1927, issued a statement declaring that it was desirable in many instances for automobile highways to be so laid out that through traffic be not compelled to pass through a city's congested area, but rather that such traffic should be routed entirely around a city. Small towns and cities which formerly compelled all traffic to pass through their main business districts are now recognizing that this is a serious mistake, and are rerouting such traffic over outlying boulevards.

City growth and the stabilization of real estate values in urban communities can be materially advanced by proper, constant and consistent effort directed toward controlling the development of the city and its environs in an orderly manner, according to a well conceived plan.

City planning may be defined as the guidance of the physical development of communities in the attainment of unity in their construction. A city consists of land allotted to streets, parks and other public uses, and of ground devoted to use for residences, factories, stores and other private purposes. To attain unity in city construction, some measure of control over all this land, whether publicly or privately owned, is essential. It is relatively easy for a city to control the development of the land owned publicly. A comprehensive plan can be adopted for the location of public buildings, streets can be laid out in new districts in relation to the plan, even



AS THE NEXT GENERATION MAY SEE IT

Here is the dream which Chicago's city plan commission has for the reclaiming of its river. Heavy traffic will move below, while lighter traffic will be carried on elevated roadways, with artistic bridges spanning the river at intervals.

the structure of municipal buildings can be controlled according to a general scheme.

It is private ownership of land, however, that causes gravest problems to the city planner. Under the laws of the United States, a man's house is his castle. He may not be disturbed in its possession unless his occupancy causes direct and material injury to his neighbors. Legal restrictions may be thrown up about the use of private property which are constitutional and entirely within the power of municipal governments. Building height limitations, building codes, and zoning laws are direct efforts on the part of city governments to control the use of private property and, when reasonable and uniform in their operation, courts have invariably held such control to be constitutional.

Two considerations prompt city planning—the aesthetic and the

practical. The day of the dreamer who raved over "the city beautiful," but who forgot "the city useful," has passed. Such dreamers conceived many extravagant plans for the rebuilding of the modern city, which, if adopted, would have bankrupted the richest municipality. Monumental fountains at downtown street intersections formed a part of his ideal for cities. His artistic and impractical buildings would have lined business streets. Palaces for workingmen beyond their purse or pleasure did not to him seem impossible.

This class of false prophets has been replaced by the practical city planner, who places utility first, and beauty second in his scheme of the utopian city. Cities which have grown haphazardly along natural lines cannot be rebuilt in a decade to accommodate the ideas of even the most practical city planner. The cost is too great, and while old sections of existing cities may be vastly improved, greater progress will be made in planning and directing the development of new and outlying districts.

City planning is being forced upon many communities, not merely because of grievous mistakes in structural design which took place when the city began to emerge from the village or town classification, but because of problems incident to modern civilization. The passenger automobile has come into general use in all American cities, but it seems probable that within ten or fifteen years the number of automobiles then in use may be more than double those employed now. Furthermore, the use of automobile trucks is but in its infancy. The mobility of this form of freight transportation makes available all classes of land for intensive industrial and commercial purposes, and if there were no other reason than this, the use of the motor truck would become increasingly popular and profitable.

Again referring to the opinions of Thomas Adams, general director of plans and surveys for the City of New York, he points out the fact that most cities are confronted by the serious problem of replanning their structural layouts, due to the advent and tremendously increased use of motor vehicles. He emphasizes the fact that the tendency on the part of those who would reform conditions is to seek a solution of how to *get rid* of traffic, which is, as he states, the very life blood of a city, building up and sustaining its real estate values. Mr. Adams maintains that the problem to be solved is not *how to get rid of traffic*, but how to *regulate the traf-*

fic, both pedestrian and vehicular, which congests the main highways and cross intersections of a busy city. The final solution, in the opinion of this authority, will be to so regulate *the use of land and the character of buildings* erected thereon that congested traffic will not tend to originate in a *small area*.

Advocates of city planning maintain that real estate values are enhanced by proper and practical city plans. The shifting of values in business districts has had a most demoralizing effect upon all large cities. This condition was partly responsible for the adoption by the City of New York of its zoning ordinance. It is the motive which is causing cities throughout America to adopt schemes for street layouts to accommodate the constantly increasing traffic burden, and to direct, as far as practicable the growth of the city along lines which will contribute to the health, happiness and welfare of all inhabitants, and incidentally to the stabilization of real estate values.

For centuries some cities have grown along well conceived plans, often fostered by some despotic government usually against popular consent. Paris, under Baron Haussman, spent \$250,000,000 on a system of boulevards, and London has done much to improve its Strand. Los Angeles, Boston, Chicago, Philadelphia, St. Louis and Cleveland, in America, have spent large sums of money upon public improvements under the guidance of city planning commissions.

Cities of all sizes and types can benefit through intelligent planning, but the most effective work can be done while a municipality is still small, and in a formative state. Districts can then be set aside for special uses without hardship to individual owners, and as the city grows, its course will follow the plan adopted.

City life is complex, and the factors of its physical development are numerous. To secure unity, planning should include and harmonize as many as possible of these factors, whether public, semi-public, or private. A comprehensive plan should contain provisions for:

- 1—Systems of streets with building lines placed according to the use for which the street is designed.

- 2—Waterfront improvements.

- 3—Public parks, playgrounds, golf courses and other recreational spots.

- 4—Sites for public buildings, such as the city hall, court house,

auditorium, or library, now commonly being done in the form of a group plan of such structures. Schools and various types of semi-public buildings must be provided for.

5—Transportation systems, local and long distance, providing for terminals, both passenger and freight.

6—Public utilities, such as gas, electric, and waterworks systems.

7—The subdivision of land, and the regulation of the construction of improvements thereon.

8—The location of private enterprises, such as factories, warehouses, markets, commercial structures, and other types of business.

9—Building regulations limiting the height of buildings, the area of the site to be covered, and the type of construction.

10—A sufficient amount of land to be used exclusively for residential purposes, regulated to prevent the encroachments of business uses, so as to conserve the value of districts for home use.

11—A comprehensive plan for financing public improvements, according to the needs of the city, with as little burden to taxpayers as possible.

Detailed working plans need not necessarily be adopted for an entire urban area. Locations for public buildings should be fixed, reservations made for parks, schools and playgrounds, and in outlying sections streets may be planned with reference to the thoroughfare system as a whole. From time to time, as growth demands, these improvements can be installed, and developments carried forward. In this manner, public moneys can be conserved, and large savings effected, obviating the necessity of acquiring lands at great expense for such purposes after private owners have improved areas with substantial buildings.

It is regretable that most improvements designed to make the municipality a better place in which to live have been bitterly opposed by shortsighted persons, many of whom fail to vision the needs of the community as a whole. Progress has been combating inertia throughout the ages. With the passing of the old town pump, the newfangled waterworks systems were unfavorably received. Taxpayers fought street paving as an unwarranted expenditure of city funds, and were particularly bitter when forced to bear their proportion of the cost of paving the streets in front of their properties. Street cars were considered a menace to public safety. Sanitary systems met favor only gradually. The road of the public

improvement has ever been hard. Not until the twentieth century was definite planning considered a necessary function of city government. Today scores of cities in the United States have city plan commissions under the direction of men trained to study civic needs, and diagnose and direct the development of the city along orderly lines.

Planning has many triumphs in this country. Washington, considered by many the most beautiful city in North America, is the climax of the planner's skill, and is a noteworthy example of early efforts in city planning. Cleveland and San Francisco have led American cities in the adoption of plans for the grouping of public buildings. Chicago has widened and extended Michigan Boulevard along its lake front, and definite plans for reclaiming low-lying land along Lake Michigan are now being carried forward on a large scale. The list of American cities having commissions for the development of city planning is yearly becoming larger, as opposition is gradually being broken down, and citizens are realizing the merits of a comprehensive scheme of city expansion.

Transportation is intimately related to the orderly growth of cities. Intelligent and scientific plans are being adopted in many cities for the widening and extending of present main thoroughfares, and the creation of new streets to care for the tremendous volume of road traffic daily increasing with the widespread use of motor vehicles. As land becomes readily accessible to people through the development of good roads for vehicular traffic, property values increase, and owners are accordingly benefited.

Many real estate operators and subdividers, formerly cold towards the subject of city planning, have come to see that it has a definite and favorable reaction on their business, and most of them now urge a wider application of the idea. Owners of land now recognize the influence of city planning, realizing that its intelligent application means greater returns in money, as their property is improved and sold.

City planning is now promoted along definite lines. Usually through some public spirited organization, sufficient sentiment is crystallized to provide for the passage of a city planning ordinance, authorizing the creation of a commission, and permitting it to expend funds for the formation of an actual plan on paper. Experts are called in, long and careful studies are made of all phases of city life, and then a definite series of maps and surveys are prepared,

attempting to provide for the city's expansion for years to come. All new growth is directed and controlled along co-ordinated lines, so the city may expand in an intelligent way. It attracts new residents through its convenience, and beauty, and with the growth of population new real estate values appear, and are capitalized in rentals.

The modern city plan gives primary attention to streets, as much of the intra-city transportation of passengers and goods depends upon them. Thoroughfares are widened and linked up with other streets, new bridge and street car extensions are suggested, and control is established over new subdivisions. Parks and recreational places are planned for the future, areas of natural scenic beauty or historic significance are preserved through purchase, and public building programs developed and co-ordinated, so that such structures will be imposing, attractive, properly located, and adequate for community needs. Co-operation of the school board is obtained, so that schools will be placed at proper locations, with reference to the future needs of the city's population.

The larger cities of the country face two distinct problems, that of new development in the suburbs, and changing past developments in downtown sections which may prove a hindrance to future expansion. Most of the suburbs of the larger cities are keenly alive to the necessity for intelligent study and control, and have adopted zoning as part of their city planning. They are extending their thoroughfare systems—on paper at least—far beyond their present limits, so that as new territory is absorbed and built up, there will be unity of development.

Changing the character of old and established sections of a city presents many problems which are difficult because of the expense involved. Nevertheless many streets are being widened, the height of buildings, and the occupancy of lots are being controlled, resulting beneficiary to all. City planning, particularly as it effects the rebuilding of the older portions of a city, is costly. There is an element of danger in working on a wave of high enthusiasm in that a city may commit itself to the expenditure of more money than it can afford. The tendency of most cities is to assume that city planning provides comforts and conveniences for future generations, and that children yet unborn should be required to pay all or most of the cost. Recourse is had to bond issues in large sums. A city's credit is at stake when it pledges itself to borrow money which it

is not to pay back within a period representing the life of an improvement for which the money is expended. Interest mounts up alarmingly, taxes are increased to meet the added burden, payable not by future generations, but by the present one, which struggles along within restricted income because of the large sums which must be paid as interest, or assigned to a sinking fund to care for the future payment of the debt. Many improvements considered most desirable and beneficial under city planning are in no way self-sustaining, so that the problem of debt incurred is ever present. As a result, a city about to enter upon expensive improvements should carefully consider the means whereby funds are to be obtained to pay the costs of such developments.

City planning can scarcely be begun at too early a date in any growing community; delay renders such a program increasingly difficult. Effort and money expended in this direction will pay large dividends in the years to come by enhanced land values, and the increased facilities adding to the convenience with which the inhabitants may carry on their various occupations and avocations.

Review

- 1—What is the history of growth in most cities?
- 2—What is a regional plan?
- 3—How does it differ from "city planning," so-called?
- 4—What effect will a regional plan have on the future growth of cities?
- 5—What is the modern plan for directing automobile traffic through towns and cities?
- 6—What is the modern tendency towards the control of privately owned land?
- 7—What are the two considerations prompting city planning?
- 8—Wherein does the modern city planner differ from the enthusiast of several decades ago?
- 9—Why should traffic be regulated at its source rather than eliminated?
- 10—Why is city planning being forced on many cities?

11—Are real estate values enhanced by city planning? Why and how?

12—Name a number of elements a comprehensive city plan should embrace.

13—Outline the character of opposition offered to early programs of municipal improvement and planning.

14—What is a city plan commission, and how does it usually function?

15—What is considered to be America's best planned large city?

16—How do modern subdividers consider city planning?

17—Why is it necessary to give first attention to planning the street systems in cities?

18—Why must momentary enthusiasm in planning, particularly in congested areas, be soberly considered?

19—What is the most expensive item encountered?

20—When should city planning be begun?

CHAPTER 30.

THE CITY AND ITS CITIZENS

The Spirit of the City—Cities possess individuality due to local characteristics of citizens—Racial and national traits of residents influence development—Influence of important men upon growth and expansion of cities—Importance of co-operative efforts of various organizations.

Cities, like individuals, possess certain characteristics which are unique and tend to distinguish one from another. Not merely a physical mechanism, the city is a product of the vital and human characteristics of its citizens. It has what may be termed "personality" and this civic personality differs as in each individual.

Not alone may cities be studied from the viewpoint of geography. The development of settlements into larger urban communities is, of course, closely allied with advantageous location with reference to natural resources to foster trade and manufacture. Good transportation systems encourage commercial growth in towns and cities. Nor is the topography of a town site and its surrounding territory all important. Surface irregularities may influence directional growth in towns and create building difficulties which may influence the type, style or position of certain structures. Climate exerts its influence upon the development of cities. Some, in fact, are almost entirely dependent upon climatic advantages to attract residents and visitors. Many other factors enter into consideration when the student of cities seeks to account for reasons which have caused cities to grow and develop according to one or another plan.

Above all, a city reflects the characteristics of its inhabitants. Brick and mortar, steel and stone, assembled to form a beautiful public building, mirrors the spirit of the citizens whom it serves. Wide open spaces in slum districts, where children may play and their elders may seek fresh air and recreation, announce to the world the consciousness of social responsibility which the city and its citizens possess.

A street railway system serving well the needs of the city is the result of popular demand and is not alone the product of capital. Forms of recreation and amusement flourish or fail, dependent upon their appeal to the citizens. National and racial characteristics

of a city's populace are often reflected in architecture of public and private buildings, popularity of various forms of amusement, attitude towards philanthropies, public charities and the like.

In the western part of Ohio are located three small towns each situated along the same highway. One was settled by Germans of Protestant persuasion. Only Lutheran churches exist in the village. Three miles to the south the second town likewise is German in origin, but predominantly Roman Catholic in religious belief. The third village four miles farther south was originally a French frontier fort and its early settlers were of that nationality. Later some



A FIVE MILLION DOLLAR PIER

Chicago in 1910 built this monster pier, 3100 feet long and 300 feet wide, over the waters of Lake Michigan. It furnishes a landing place for lake boats, and also is a recreation center. It has never been a success from a business standpoint, although trans-shipping is easily accomplished from boat to train. At its end is a large recreation pavilion furnishing amusement to thousands on summer nights. Many cities are using water front facilities for the erection of free recreation piers.

Germans came to settle there. This became a distinctly Catholic community.

In the first town, the inhabitants are thoroughly Americanized, modern and up-to-date in their business and home affairs. English is spoken in preference to German and social customs are much as would be found in any small town of like character in Ohio. The second town is quite different. German is spoken in preference to English, the local customs and practices are relics of the training of its early founders,—the entire business atmosphere is foreign.

The same is true even to a greater extent in the third town, which is even more foreign and less Americanized than either of the other two. Here, in a distance of seven miles are these three communities, each as different from the other as could be imagined to exist between towns located in a progressive American state. Habits, customs



THIS TOWN MAINTAINS AN UNIQUE "BUREAU"

The town of High Point, N. C., believes in having a "bureau" of information for autoists and sightseers. It actually built a mammoth old-fashioned wooden bureau for that purpose. The wooden structure is 32 feet high, 27 feet wide, and 14 feet deep.

and business practices, religious beliefs and social activities are framed differently so that people living in either one of the three can be recognized as a "foreigner" by inhabitants of the other two.

Cincinnati was early settled by a fine class of industrious Germans, who soon became active in manufacturing and commerce.

Art and music were fostered by these cultured pioneers who found recreation and pleasure in enjoying fine paintings and beautiful melodies well played by skilled musicians. Conservatories of music, art schools and galleries were built and fostered by the patronage of Cincinnati's best citizens. These institutions became outstanding in America. For years the Cincinnati Symphony Orchestra has held an enviable position in the world of music. The Rookwood Potteries developed as an early industry of that city. Ever practical, but also artistic, these Cincinnatians have impressed upon their city, located on the banks of a muddy river, and among the hills of southern Ohio, a character which distinguishes that place from others.

Visitors to Philadelphia and Baltimore are always impressed by the rows of red brick terraces built to sidewalk lines with marble steps leading to entrance doors. Each terrace, although not so appearing to a passerby, is, in fact, a separate building, and usually owned by its occupant. These "row houses" have become a part of the characteristic plan of these two cities. Builders erect and offer them for sale in family units much as single houses are built and sold in other American cities. Baltimore without its long rows of red brick terraces simply would not be Baltimore.

Los Angeles is a distinctive community in that it has in recent years exhibited a rare appreciation of art in its residential and business architecture, to a degree, indeed, that outstrips other American metropolitan centers. This has been due to very definite causes. Between the years 1910 and 1920 there were brought to Los Angeles by the moving picture industry from all parts of the world many highly paid artistic designers of buildings and sets to be used in the "movie" industry. After serving for a time at this interesting work, some of these artists became depressed by the fact that their beautiful creations stood only long enough to be photographed, and then were ruthlessly destroyed. Many yearned for more enduring monuments, and turned their attention to designing dwellings and business structures. They selected the so-called Mediterranean style of architecture as their motive, and wove into it interesting modifications, creating a class of beautiful structures which now adorn the newer sections of Los Angeles, particularly the Hollywood district. The imprint on business building architecture has spread all over the city and its environs, and even to Santa Barbara, 100 miles away, which has been almost entirely rebuilt, following its earthquake,

as a typical Spanish city. Los Angeles is constantly striving for higher things architecturally. In addition to being the film capital of the world, the city is deriving enduring benefit from the artistic talent it has been importing for many years. From the standpoint of the city's appreciation of many forms of art, it may be called the Paris of America.

Downtown Chicago is crowded with pleasure seekers every night. Theaters and moving picture houses operate to capacity crowds. Long lines of patrons await the "second show" at popular picture houses. Some of these are strangers but most are Chicagoans. The habit of seeking night amusement in the downtown area is characteristic of the residents of that city.



A MODERN CONVENTION HALL

This great municipal auditorium, costing over \$10,000,000, built at public expense, attracts to Cleveland annually thousands of visitors who spend their money freely, enjoy themselves, and are impressed by the good qualities of the city. Every large community now finds a building of this character a fine civic asset.

Cleveland has become famous as a city of good will. Philanthropies of major character, in recent years crystallized in the first Community Fund, makes Clevelanders known throughout the world as citizens of a city that takes care of its people who are in need. The pocketbooks of its people are wide open for hospitals, relief agencies, and public charities.

San Francisco is noted for its night life. Perhaps no city in America, other than New York, pours out so many people into the downtown theatrical and cafe districts, not to mention Chinatown, as does San Francisco. Many are tourists, it is true, and yet the residents of the city itself are abroad in large numbers. This can doubtless be traced to the days which succeeded the gold rush of '49 when the town, always "wide open," was famous for its varied

forms of night entertainment. To this day the practice continues and one may be assured of a "big night" if he determines to go abroad after the sun has dipped into the Pacific beyond the Golden Gate.

New Orleans, too, has its unique characteristic—the purveying of food. Few cities have as many unique and satisfying restaurants



WHERE MULTITUDES MINGLE

Fifteen thousand persons may be comfortably seated in this beautiful auditorium of the new convention hall in Cleveland. It contains a \$100,000 pipe organ, a mammoth stage, and can easily accommodate a three-ring circus. In the basement is a large exhibit hall, about the same size as this one, which provides several hundred booths for exhibition purposes. There are also a number of smaller convention halls in conjunction.

as has the southern metropolis. Think of New Orleans and one thinks of the fine dinners he had there. Though possessed of many other charms—some of them unfortunately fast disappearing—the southern city endears itself not only to its own residents but to thousands of visitors as well because it is "famous for fine foods." This

may be traced back scores of years to early environment when to entertain at food and drink was an art and not a mere social custom.

Boston has for years been the accepted home of letters and culture, and probably contains, in proportion to her population, a larger number of men and women capable of making or judging good literary work than any other city. Thus Bostonians have earned the characteristics of culture for their city.

Washington, the seat of national government, although the best planned and perhaps architecturally the most beautiful city in America, does not possess in any sense a spirit of civic loyalty and responsibility among her citizens. Perhaps this is due to the fact that most of the influential residents of that municipality do not claim it as their home. Governmental activities engage the efforts of most of the inhabitants who frequently obtained employment through political favor and have left permanent homes in many different localities to accept positions in national service. Deprived of a voice in local municipal affairs by not having suffrage, the city and its problems are matters of small concern to them. Control of the city itself is a matter of Federal policy and not of local concern.

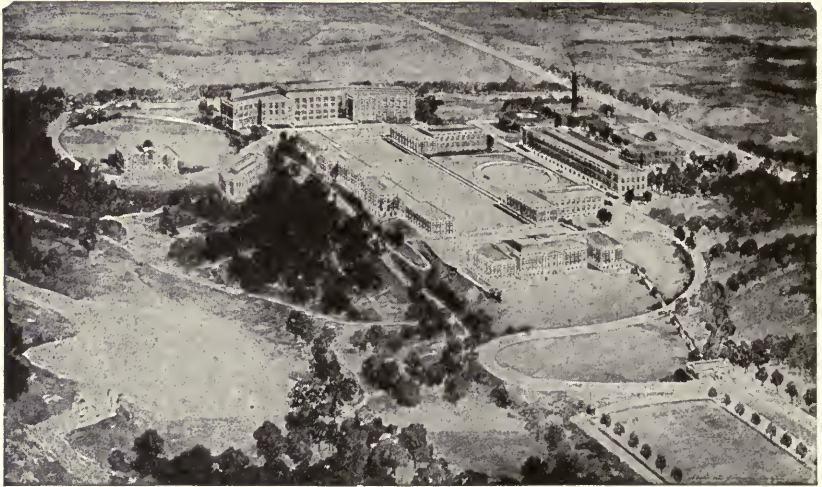
The social and civic responsibility that citizens of a city possess or lack often accounts for many of the phenomena which distinguish one community from another. Lawlessness will bring disrepute to a city quicker than almost anything else. Chicago, for some years, suffered from an orgy of street murderers and gang feuds that blacken the record of a city which Ambassador James A. Bryce termed "the most typically American place in America." (1) Labor wars in the building trades brought unsavory reputation to San Francisco until vigorous prosecution re-established her position as a community of law abiding citizens. Political bossism in Cincinnati gave that city a taint that was eventually effaced by the resumption of municipal control by her self-respecting citizens.

If a city endures dishonest government, political graft, mob and gang lawlessness, it reflects either the desire of a majority of her citizens to live under such conditions, or a lack of moral stamina in the majority to better matters. A city is known by the citizens it keeps. Ultimately conditions existing in any American city are approximately those that the majority sanction.

How do such conditions and the attitude of the citizens affect

(1) See Bryce, "*The American Commonwealth*," Vol II, p. 858. The MacMillan Co.

city growth and development? Where labor conditions are wholesome, be they union or non-union, and adequate pay is accorded for an honest day's work, those engaged in manual occupations are satisfied and contented, able to acquire homes and personal possessions, patronize local enterprises and become knit into the social fabric of a city's life. Business prospers, new buildings are required and urban expansion accrues as population increases.



BIG BUSINESS VISIONS THE FUTURE

Great corporations are spending millions of dollars in experimental work to improve their products, and widen their use, so that factories may grow to give work to more men and city life be made more comfortable. Here is Nela Park, a beautiful estate of 116 acres in Cleveland, where hundreds of persons are employed under ideal conditions, experimenting and testing apparatus made by The General Electric Co. It is, probably, the foremost example of its kind in the world.

Where labor costs are excessive or where union leadership makes for unsettled industrial conditions, manufacturing enterprises are hampered, building programs are delayed by disproportionate labor costs and stagnation results. New enterprises refuse to locate where such conditions exist and capital seeks other places for investment. Unsettled labor conditions have prevented more than one American city from obtaining a coveted industry where a choice of another location could be made where conditions were more favorable.

Reputation for municipal extravagance is another strong fac-

tor in retarding city growth. Capital seeks investment in enterprises where a fair return commensurate to the risk involved may be obtained. Broad boulevards, bordered with beautiful shade trees, fine public buildings, and expensive municipal services are desirable so long as the cost thereof is measured by the services they may yield to a city and its inhabitants. Public expenditures must be limited to the needs of the community and the depth of its pocket-book. Cities, like individuals, may live beyond their incomes with the result that excessive taxes and heavy assessments have to be borne by property owners and productive industry and commerce engaged in business therein.

As cities grow in population and expand in area, new public services are demanded. Streets must be extended and widened, new highways opened, additional transit systems constructed, larger and better public buildings erected, new public utilities installed. All of these require huge expenditures of public money which must be furnished by tax levies. There is a natural tendency for people to seek residence and business locations where tax rates are low. The growth of suburbs with independent municipal governments is partly accounted for by the migration of city people to these smaller communities with lower tax rates.

Some communities are blessed in the possession of a body of citizens imbued with a spirit of civic consciousness which lead them to devote their time and efforts toward the promotion of many enterprises and activities which foster city welfare and growth. Often this attitude is manifested in the support of a new manufacturing enterprise for the community, the erection of an office building, the creation of a financial institution. Sometimes this spirit is evidenced in the laying out of large parks for public use, fine subdivisions, the building of homes to be sold to working men at proper prices. Again it is seen in support afforded social agencies, the building of hospitals, playgrounds, recreation places and educational institutions.

Henry Ford served Detroit better than he anticipated when he built his original factory there to produce low priced motor cars. Samuel Mather in fostering the great Community Fund has done for Cleveland a service which will lend luster to his name in pages of history and place that city in the front of American communities in social welfare. To Miami, Florida, the name of Henry Flagler, who built a railroad for private gain, is sacred as a civic hero. Such

figures, by their services lend prestige to the places where they have lived and have had their principal business activities. A multiplication of such men make a truly great city and leave a heritage of honor and good will. But not only is the city spirit embodied in the social consciousness of one or a dozen individuals. It must be reflected in the consciousness of the majority of its citizens.

Attitude of the general public as represented by its civic organizations does much towards city growth. Chambers of commerce, service clubs, real estate boards, building owners associations, and a host of other organized bodies of men and women reflect the public mind and the civic spirit of the inhabitants of a city generally. As the city becomes large and unwieldy such influences are not as effective as in the smaller community where individual contact is preserved. It is in the very large cities where municipal government finds itself most involved. Local improvements and movements tending to make the city a better place in which to live are sometimes born in the minds of individuals who usually find it desirable to present them to the public through the instrumentality of leading civic bodies. With executive heads, secretarial staffs, and adequate personnel in the way of committees, an organization can adopt a plan, develop and embellish it and turn it over in a finished state to the legislative and executive bodies of a city government to put into effect.

The attitude of the managers and directors of public utility corporations is important, for through the operation of commercial enterprises is furnished the service given to home owners and business men. Public utilities, which a decade or two ago operated under the direction of the well known motto "the public be damned," have reversed their policies within the past few years and are attentive to suggestions for the interest of the general public. For the most part public service corporations are furnishing a better and higher grade of service than ever before in the history of American municipalities.

Co-operation and mass campaign work during the liberty loan campaigns, waged in every sizable city during the Great War, taught many lessons which are reflecting themselves continually in modern city life. New improvements are sponsored by "Committees of One Hundred Organizations" instead of by a few enthusiastic persons upon whom the burden formerly rested. Great community drives for charity and welfare work are conducted in like manner,

it now being accepted that poverty is a civic and not an individual liability.

An entirely new type of organization which promises to have great future influence in elevating the standard of city life is to be found in The Carnegie and Russell Sage Foundations, the Cleveland Foundation, the New York Community Trust and other similar ones which are being organized or endowed from time to time. The Cleveland Foundation, for instance, has been in existence since 1918



(C) Underwood & Underwood

WHERE THE BIG CITY GOES TO PLAY

A remarkable picture of Coney Island from the air. Here New Yorkers by the many thousands throw aside dull care and disport themselves in the ocean waves, or visit the hundreds of amusement concessions. Millions who live in cramped quarters in the big town find here a place to play.

and has been instrumental in conducting valuable surveys on public education, criminal justice and similar matters. Many interesting and valuable recommendations have been put into effect in Cleveland as the result of the work of this foundation. It is financed by contributions of wealthy citizens who wish to have their money perform

a public service. The Cleveland Foundation will, in the course of the next several decades, come into possession of millions in money, willed to it by wealthy contributors.

American cities, which have been groping about for a generation or more for a solution of the problem of better government, seem to have found it, in part at least, in the adoption of the city manager plan. In 1928 there were nearly 500 American cities operating under city managers. While but a few of the large cities have adopted it, due in part to opposition on the part of politicians, it has proven that it has real merit, resulting in efficient city management at less cost and eliminating many of the evils of the old systems. It is noteworthy that most cities having managers have been saving money under the new plan and at the same time rendering better service. Clean, efficient local government helps a city to grow and prosper. Business men are attracted, thereby creating new real estate values by virtue of employment given to men working in new plants.

Facilities for holding public gatherings such as conventions and exhibitions are conducive to the growth of a city. Thousands of people are brought to a community, some of whom later return to make the place their permanent abode. What the great convention halls in Cleveland, Chicago, Milwaukee, Kansas City, St. Louis, Denver, San Francisco and other cities have done in the way of attracting favorable attention to the communities in which they are located cannot be estimated. It is quite certain they are well worth the investment in spite of the amount involved.

In the December 21, 1927, issue of "*Greater Cleveland*," a Bulletin on Public Business published by The Citizens League of Cleveland appeared the following description of an ideal for cities, an objective worthy for citizens to strive to attain:

THE CITY

A city, sanitary, convenient, and substantial; where the houses of the rich and poor alike are comfortable and beautiful; where the streets are clean and the sky is clear as country air; where education and art have a place in every household; where vice is suppressed and life is as safe as in the home; where parks and playgrounds are within reach of every child and healthful recreation is provided for every citizen; where living is pleasant, toil honorable, and opportunities plentiful; where worth and not wealth give standing to men, and where the power of character lifts men to leadership; where visitors are attracted by the

atmosphere of thrift and good will, and where the chill of the stranger is mellowed by the spirit of friendliness; where the architectural excellence of its buildings adds beauty and dignity to its streets; where government is honest, economical and efficient and where the principles of democracy have their fullest expression; where the commerce in goods is great, but not greater than the exchange of ideas; where capital is respected but not worshipped; where industry thrives and brings prosperity alike to employer and employed; where interest in public affairs is the test of citizenship and devotion to the public weal is a badge of honor; where the peoples of every clime can come and be blended into one whole; and where each generation will vie with the past to transmit to the next a city greater, better and more livable than the last.

Review

- 1—What is meant by the phrase, "The personality of a city"?
- 2—Should the city be studied alone from the standpoint of geography, topography and climate?
- 3—If not, why not?
- 4—What is meant by "the consciousness of social responsibility" in citizens of a city?
- 5—How do national and racial characteristics of the citizens of a city reflect themselves in the physical characteristics of a city?
- 6—How did the early settlers of Cincinnati stamp their individualities upon their city life?
- 7—Philadelphia and Baltimore have characteristic types of dwellings—what are they?
- 8—Explain the popularity of the apartment as a dwelling for New Yorkers.
- 9—What cities are noted for their "Night Life"?
- 10—What is Cleveland known as?
- 11—What is New Orleans noted for?
- 12—What city is called "the city of culture"?
- 13—Is Washington, D. C., in your opinion, a typical national capitol? Why?
- 14—Should not a national capitol be a center of more than governmental activity?
- 15—What is the effect on city life of "lawlessness"?
- 16—How do the habits and customs of the citizens of a city influence its growth and development?
- 17—What is the effect of the municipal extravagance upon cities?
- 18—What influence does the activities of individual citizens have upon cities?
- 19—Explain the value of co-operative civic organizations?

CHAPTER 31.

THE CITY OF THE FUTURE—A VISION

Startling changes in sight—Accomplishments of the past reviewed—The battle to conquer congestion—Tunnels, bridges and "sky elevated roadways"—Water transportation to afford cheaper rates—What of the future of street cars?—Air navigation will increase—Changes in building construction—The home of the future—Other marvels in city life.

Cities represent the highest material handiwork of man.

As barometers of civilization, they have risen up and become mighty, merging into their manifold activities the inventive genius, beauty of design, and convenience of living that human mind has poured forth in all of its amazing achievements. From mere places of abode, and depots of trade, they have developed into magic centers of commerce and architectural design, where may be witnessed the splendid accomplishments of men gifted in artistic ability and inventive power. Truly, the city of today stands as a monument to man's constructive force.

But what of the city of the future? If mighty strides have been made, particularly in the past fifty years, what may be expected in the next quarter or half century? Will the flood of inventive ideas continue to rebuild and reconstruct cities? Will the remarkable changes which have taken place in cities since the beginning of the present century be duplicated in the years to come, and, if so, what kind of a place will the city of 1950 or 1975 be?

It is a fascinating speculation to engage in, for many will live to see some of the startling changes which even now are giving evidence of birth. In this great machine age, dominated by modern industrialism, there will doubtless come about many startling changes in modes of living and methods of doing business. The student of real estate conditions, the builder and the investor will do well to make a sober study of changes which seem to be inevitable, for on such study may be based future success or failure.

Amazingly fantastic as appear some of the visions on the distant horizon of community development, yet they are no more impossible of fulfillment than some of the things which have come about during the last twenty-five to fifty years. Marshall them for

review—the electric light, the storage battery, the trolley car, the building elevator, the skyscraper, the subway, internal combustion engines, the automobile, iceless refrigeration, motion pictures, the airplane, radio transmission—a mere dozen of scores of astonishing transitions which have come about to contribute to modern civilization. Practically all of those mentioned are capable of great improvement, and may be said to be still in their infancy.

This is an age of suburbanization. Up to 1910 people drifted to cities—and usually remained within their borders. The automobile came, marking significant changes. People found employment in the city but many sought residence beyond its limits. As far back as 1920, the United States census showed that 10,500,000 people lived within ten miles of the borders of cities of over 100,000 population. This represented about forty per cent of the population of the cities themselves. There were ten cities whose suburban population was greater than the population of the parent city, while in thirty cities the suburban area was growing much more rapidly than the area of the centers themselves. Accurate statistical data for the period from 1920 to 1928 is not yet available, but it is a matter of common observation that the tendency toward suburbanization has continued at a pace even faster than before.

This condition has presented American cities with their greatest problem—the conquering of vehicular congestion. Many millions of dollars will be spent within the next few years in opening up new radial arteries of travel to suburban areas. Streets will be linked to form new thoroughfares, and many existing highways will be substantially widened to care for the steadily increasing flow of traffic.

In larger cities, however, street widening will not suffice. Already it is evident in the big cities of the country that it is an economic waste to drive an automobile downtown in heavy traffic, unless cars can be made to move at a fast and uniform rate. Accepting this condition, subways for electric railway transportation will be built in those cities where traffic is heaviest. Probably vehicular subways will also be constructed for through traffic in congested downtown districts.

Double decking of streets will be resorted to in some cities, similar to Wacker Drive in Chicago. Plans are now in progress to extend this double deck highway into the suburbs of Chicago, to be used by fast moving automobile traffic. A double deck street is

also planned for West Street in New York City. Slow, heavy traffic on these double deck streets will be relegated to lower levels, while fast passenger traffic will use the upper daylight level. The day will doubtless come when above this level there will be passageways used solely for pedestrian travel. This would mean that on such thoroughfares retail store fronts would be on the third floors of bordering buildings. There is little doubt, too, but that in con-



(C) Publishers Photo Service

WACKER DRIVE, CHICAGO'S "TWO STORY" STREET

This picture, taken from the tower of the new Chicago Tribune Building, shows the development which has taken place on Michigan Ave. just south of the Chicago River. To the right is the Wrigley Building, while in the foreground may be seen the new Twin Tower Building. Below may be seen Wacker Drive, having an upper deck to carry vehicular traffic across and to the westward of Michigan Ave., while below heavy truck traffic is taken care of. Eventually it is intended to extend this drive for a considerable distance along the Chicago River.

gested sections of large cities spaces such as squares and small parks will be double decked, vehicular travel moving underneath, with pedestrian traffic on the elevated platforms. Such development is merely an engineering problem, and would be entirely possible.

A group of architects, headed by Harvey Wiley Corbett, in

New York, has already planned a four level highway, or series of them, for that city. The lower level would care for subways. Next above would come heavy truck traffic. The third level would accommodate passenger cars only, while on the fourth level pedestrians would pass to and fro on elevated sidewalks.

Even in Paris, with its buildings limited from six to eight stories, the problem of street congestion has prompted the preparation of plans for a great elevated railway system which would be far above building roofs. It was suggested in 1926 by Architect Bouchet of the Paris Street Service. The "sky elevated" would consist of great steel spans, resting on huge hollow concrete towers, through which passengers would be lifted by elevators to reach their trains. High above the roofs of buildings trains would shuttle to and fro at speeds otherwise impossible.

Man has already burrowed into the earth to accomplish the same objective. For several years vehicular tunnels for automobiles have been in operation in Pittsburgh, San Francisco and Los Angeles, where mountains have been pierced to allow traffic to pass through them uninterrupted by usual street interferences. The Liberty vehicular tunnel in Pittsburgh is used daily to its utmost capacity, while three or four tunnels for use of automobiles under high hills in Los Angeles are in use continuously. On November 12, 1927, the great Holland vehicular tunnel under the Hudson River, connecting Manhattan with New Jersey, was thrown open to use. Built at a cost of over \$48,000,000, it has a capacity of 3,800 cars hourly, about five minutes being required to pass under the Hudson River. There are twin tubes, each with a twenty foot roadway 9,250 feet long from portal to portal. Tolls ranging from twenty-five cents for single passenger cars to \$2 for heavily laden trucks are expected to pay the cost of the tunnel in ten years' time. Many more such developments may be expected in the next decade or two in large cities all over the country.

San Francisco is planning a huge \$18,000,000 bridge to span the Golden Gate, while New York and New Jersey are engaged in erecting a mammoth \$50,000,000 bridge across the Hudson River, to be used in addition to the Holland tunnel. Cleveland will spend \$8,000,000 to again span its river valley. New Orleans will throw a great bridge across the Mississippi to its opposite shore. Detroit will link up with the Canadian shore nearly a mile away, and such work will go on endlessly. Cities all over the world are planning

great bridge edifices in the constant fight to conquer traffic congestion.

Transportation will develop many revolutionary changes in the next twenty-five years. Bus lines will continue to increase. In 1928, the total mileage of bus lines in the United States exceeded the railroad mileage of the entire country. One can travel from coast to coast on motor busses, but it does not seem likely that this service will supplant steam railroads in long hauls for either passengers or freight. The use of the privately owned passenger automobile will continue to increase. There are now over 23,000,000 automobiles in service in the United States, nearly one for every five persons. It is estimated by experts that this number will be doubled in the next ten or fifteen years.

With new improved Diesel engines, permitting much faster and cheaper travel on water, keener competition may be expected from watercraft in the near future. This is particularly true of the carrying of freight. It is claimed that the freight cost from Los Angeles, through the Panama Canal to eastern seaboard cities, is one-eighth of the cost of transporting goods on railroad trains. On the Great Lakes, the Mississippi, the St. Lawrence, and both the east and west coasts of the United States, improved and cheaper water transportation may be expected.

Traffic congestion in cities could be materially relieved by the prohibition of automobile parking on main arteries, and this will be done to a great extent in the near future. At present every time money is expended for widening a street, the new space provided is promptly pre-empted as storage for idle cars. Such a practice is uneconomic, and will be dispensed with. This will bring about the increased building of huge downtown storage garages in cities. Parks will be dug up, subterranean garages will be constructed, the earth, grass, shrubbery and trees being replaced so that the only evidence of the change will be ramps for entrance and exit. Spaces under streets extending off of main downtown arteries in large cities may be similarly used. Moderate storage charges will pay for such improvements in a few years.

What is going to happen to surface cars during the next decade or two? Streets will be so monopolized by private motor cars that the speed of street cars will be reduced to such an extent that as a medium of rapid transportation they will be practically worthless. In larger cities they may continue to operate in outlying sections,

and on crosstown thoroughfares, at intervals connecting with subways which will whirl passengers down to central business districts in tubes below street levels. Street cars where operated will probably run as two or three car trains, with vestibules between cars.

Street cars of the future will probably be noiseless. All noise creating parts will be enclosed to deaden sound, and wheels may be of rubber, operating on rubber rails. Science has demonstrated that proper combinations of rubber, such as now used on wearing surfaces of automobile tires, readily outwear steel. Already rubber pavements are being used in some places in America. The flat fare of five or six cents for a street car ride will be abolished, and zone fare systems will be inaugurated, ranging from two or three cents for a short ride to twelve or fifteen cents for longer hauls.

An element in transportation which must be reckoned with in the next few years is the more common use of the airplane as a commercial vehicle. Its safety has been demonstrated, and it only remains to be further improved with mechanically controlled devices to receive the steady and widespread patronage that it deserves. Germany excels in air transportation. During 1927 one German company, the Deutsche Luft Hansa, operated 220 planes continuously, which traveled a total of 46,000 miles daily, carrying passengers and freight to scores of cities throughout Europe. Germany had over 100 splendidly equipped airports and was rapidly expanding its program of air travel as a purely commercial enterprise. What Germany has done safely and successfully, America will be doing on a far greater scale within the next few years. It already has a good start, for during the year ending July 1, 1927, sixty per cent more money was expended on aviation construction than in 1925, the United States then having 4,121 miles of lighted airways. Almost every city in the United States is planning to equip itself with one or more great airports for the accommodation of all who care to come and go by air.

When airplanes come into general use, as they are certain to do within the next few years, the boundaries of a city will not be where the tax collector stops his assessments for that particular place, but fifty or seventy-five miles away in all directions. Country estates two or three hours away from town by automobiles will be fifteen to thirty minutes away by airplane. By use of helicopter devices planes will be controlled so they may rise or descend vertically on any given plot a couple of hundred feet square. The time

may come when air flivvers may be as numerous as those on the highways themselves. Early in 1928 it was reported that Henry Ford had developed and was manufacturing, after a series of successful flights, a 300-pound airplane, with wings twenty-one feet over all, propelled with a twenty-five horse power, two-cylinder motor, which could be manufactured for a few hundred dollars. It carried only one passenger.

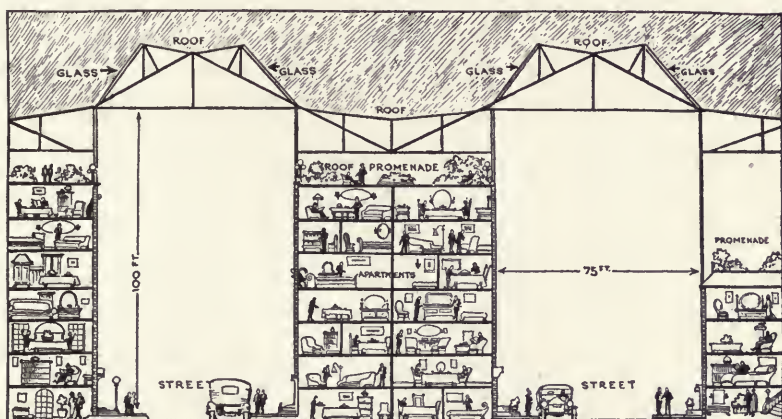
America is well on its way towards an ambitious aviation program. Mail routes are in operation in all directions, and a number of privately operated passenger lines are doing a successful business. With experts predicting that a speed of from 200 to 300 miles an hour will be attained by planes in the future, it is easy to believe that one may leave New York, Cleveland or Chicago in the evening and eat breakfast in a Pacific Coast city the next morning. The airplane in the next ten or fifteen years will bring many new conditions about in the matter of inter-city transportation, as well as short distance flying between the city itself and its far flung residential estates.

Startling changes in building construction seem likely within the next few years. Obsolescence will stalk through modern cities and collect toll just as rapidly as new ideas are put into concrete form in building construction.

Present lighting and heating systems are woefully extravagant. Experts, declaring that new and cheap forms of electricity will work marvels, draw attention to the fact that only five per cent of the energy expended in an ordinary incandescent lamp is actually converted into light. But a small portion of the energy in coal is translated into heat units. New elements will be discovered for use as filaments in lamps, and as heating units in electrical devices. New lighting systems will supplant the old. One authority declares that a phosphorescent coating will be applied to walls, activated by radio control, so that the walls will actually glow, and give all of the light needed in any room. It is believed by another authority that means can be found to reduce the price of electrical current to *one-fiftieth* of its present cost. This will mean the scrapping of all forms of heating devices now used, and the installation of separate recessed heaters in walls, automatically controlled by thermostats, so that heat in any room may be supplied and controlled without human attention.

Scientists claim that the world is soon to be supplied with an

efficient storage battery, for storing electrical energy attracted from many sources. Windmills in great numbers may be linked with such batteries, and vast quantities of electricity so created. Heat from the sun may be translated into electrical units through new devices, and the current stored in mammoth batteries for use as needed. Waves and tides of the sea, with their ceaseless action, will be harnessed for similar purposes. Electricity may be taken from the air directly by contrivances to be invented by some enterprising genius. All that is needed is a means to abstract it and harness it in efficient storage batteries for man's use. These things



PLAN GLASS ROOFS FOR CITIES

A distinguished heating engineer has discussed with associates a plan to roof in cities with glass. The above diagram shows how typical streets would be treated. For further details see book text.

coming to pass will revolutionize building methods and modes of living to a degree that may be scarcely conceived.

No less a prominent individual than Samuel R. Lewis, a distinguished member of, and past president of the American Society of Heating and Ventilating Engineers, has discussed before conferences of that body a project for building glass roofs over modern cities, thus controlling the climate and affecting many economies in living. In a model section of such a city streets would be 75 feet wide, lined with buildings 100 feet high, and linked above with great steel frames supporting glass roofs. The top story of each building would be a recreation space for tenants living below. No matter what the weather was outside, the interior of the city would be always

warm and comfortable. Means of ventilating would be afforded for hot weather, and automatic cooling apparatus might be installed to keep the temperature comfortable in extremely hot spells. The idea is fanciful, of course, but it shows what the world is thinking about in its efforts to make city life more attractive.

If tall buildings in America continue to be built—and they probably will be—the new American style of architecture will prevail. This provides for the setting back of building walls a certain height above street levels. Such a system of designing leaves a series of shelves or terraces where set-backs occur. It has been suggested that these terraces be beautified with gardens, where trees, shrubs and flowers may be carefully cultivated, for the benefit of those who have to look down from inhabitable spaces above.

Materials used in building will undergo astonishing changes. Indeed, one enterprising architect has designed a model of a skyscraper built entirely of glass, with the frame supported by heavy steel pillars in the center of the structure. The need of more light, and the fact that glass admits the rays of the sun, may bring it into very common use as a building material within a few years. Already houses have been designed with light steel frames, with the walls and roofs entirely of glass. Opaque and vari-colored glass would be used, so that even shades would not be necessary to hide occupants from view.

It will be possible shortly to telephone your lumber dealer and order lumber in any color you wish to have it, with which to trim the rooms in your dwelling or office building, if you care to use wood for that purpose. Lumber for furniture to match may be acquired at the same time. A German scientist has developed for a lumber company at Machias, Me., a method for coloring lumber in trees as they grow. He suspends pails of dye to the limbs of a tree, with pieces of rubber hose to conduct the dye down by gravity to small holes cut into the base of the tree. The tree absorbs the dye rapidly and later when the tree is cut down its wood is found to be thoroughly impregnated with the dye used. It is said that exceptionally beautiful coloring effects may be obtained by the use of this dyed wood, which may be highly polished to bring out the beauty of its grain and texture.

Basements are costly and wasteful adjuncts to a modern building. Except for the accommodation of heating plants, and occasional storage, they are scarcely worth the cost of construction, for

it is just as expensive to build a story under the ground as above it. This being so, and the fact accepted that heating plants as known today are soon to be relegated to the scrapheap, what shall be done with basements, if they are actually built? The natural answer is: Use them for the storage of automobiles. The day is coming very soon when a modern business structure or apartment house will not be built without adequate space being provided for automobile storage in its basement. This trend is apparent in new buildings in great cities, and will be greatly emphasized in the next decade. Motor vehicles are so indispensable to modern life, that some provision must be made to shelter them, for the day has gone when public street space may be used for their storage when they are not actually in use.

Amazing changes in architecture as applied to public and semi-public buildings in large cities are in sight. The stately classical type of building if placed in group plans, or in beautiful parks, may survive. Indeed, the location of public buildings should be restricted to such areas, but already there are evidences that builders of universities, churches, and transportation terminals are attracted to the skyscraper as a means of expression. The new \$60,000,000 union terminal at Cleveland has a 700 foot tower as its central architectural theme. The University of Pittsburgh is planning to erect a twenty-nine story college building, and the Temple Building in Chicago, a twenty-two story structure, with a huge spire in which the house of worship is accommodated, is not alone among church edifices which are building skyward. The years to come will see many unusual designs for public and semi-public structures, which will surpass all past conceptions.

Factories with walls almost entirely of glass, are today being placed in beautiful parks by industrial concerns. There is plenty of opportunity for development in this field, and some unusual efforts will be noted in the next decade or two.

Designers of homes are now giving full play to their imaginations, and are seeking more artistic dwellings than those now to be found in most cities. Glass, beautiful tiles, stucco and terra cotta will be more generally employed. Heating will be done entirely by electricity, while the average kitchen will be an elaborate laboratory that will outvie present day conceptions of a modern domestic science school. Phonographs, automatically operating pianos and organs will be hidden in closets or in fanciful types of

furniture, while every room in the home will be supplied with an invisible radio speaker which can be tuned in by the mere touching of a button. If there is a basement in a house, it will be used to accommodate a bathing pool, a "play room," or house the battery of family automobiles. The nursery will be encased in glass which will reflect healthful rays while baby plays with a host of educational and mechanical devices which will train him for his vocation in later life. Lawns will be cared for by public agencies supported by special assessments, according to the benefits received. Only the garden plot will be left for the householder to look after and if he cares to do so he will be able to have that included with the lawn. The housewife may buy fresh fruits, vegetables and other food supplies from the automobile grocery store that backs up each morning to the kitchen door, after the milkman and baker have passed on.

The entertainment hall, however, will be the center of home activity. This will be a sizable room, with a stage at one end, where before a screen one may on any evening sit in a great easy chair and witness visible reproductions of actual plays, operas, concerts, banquets, sporting events, and many similar attractions, hearing in detail every word or sound uttered as the event itself flashes before the eyes of the family and its guests. By subscription, any theatrical performance may be thrown upon the screen at will.

In a cabinet at the side of the stairway will be a telephone, and in front of it will be a screen on which device will be reflected the image of the person with whom the user of the contrivance is speaking. It will be possible, if necessary, to readily converse with anyone thousands of miles away, and yet see the image flashed instantaneously upon the screen. Cost, due to the almost universal use of the system, will be negligible.

Cities, now darkened with great billowing clouds of gaseous vapor, will become smokeless paradises in business as well as residential districts. Smoke is an economic waste, and due wholly to the improper combustion of coal. Coal will be outlawed from cities, and if it must be burned to produce power, it will be consumed where mines are located. Electricity will carry the burden of providing cities with all of their heat, light and power. If means have not been discovered whereby electricity can be supplied to individual buildings by wireless, it will come through cables buried in conduits entirely hidden from public view. Millions upon millions of dollars

lost in the destroying influences of present day coal smoke and gases will be saved for better employment and the increased enjoyment of mankind.

Politically the city of the future will be upon a high plane. Americans have become impatient with present irresponsible and wasteful methods, and will decree that a city be operated with the same skill and care that a big business enterprise is conducted. The city manager plan, with many refinements, will probably be used in connection with the borough plan of operation for large communities. Public service will be adequately compensated, and will attract the highest grade men of the age.

Shorter hours of employment will prevail for everyone and by better understanding of business economics, and widespread industrialization, the standard of living will be raised. Because of improved educational methods and better social conditions, crime will be greatly curtailed.

Through a better understanding of its causes, and due largely to scientific dietary, disease will be almost eradicated. If there is occasion to give it attention, it will be found possible for surgeons to replace almost every vital organ, with the possible exception of the heart and brain of a human being. Splendid medical and hospital facilities will be developed in large urban centers, where unbelievable cures and operations will be announced frequently.

Great natural parks will be developed in close proximity to urban communities, where mammoth playgrounds will be operated at public expense for all who care to use them. Lakes, rivers and streams now foully polluted by industry will be clean and pure, and bathing beaches and pools will be found on every hand, artificially constructed where natural ones cannot be provided. Recreation, and the promotion of it, will become a science, and not a mere haphazard gesture as at present.

Appreciation of art in all its forms of expression will be indicated by the building and maintenance of museums and conservatories in public parks in every city in the land. Schools, standardized as to interior arrangements, but varied as to exterior design, will be found on every hand, where free educational facilities will be available. There will be many trade schools, which will graduate fully trained craftsmen, so that apprenticeship in shops will become a thing of the past.

One of the most important departments in the city government

of the future will be the local and regional planning bureau, which will have vast powers, controlling the improvement of all areas far out beyond the natural boundaries of the city. Through activities of such bureaus cities will be built artistically, conveniently and wisely, so that a community thus served will be developed in a way that all facilities may be used for their highest and best use.

* * *

Truly, the city of the future will be a desirable place in which to live!



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